



The Irish Ergonomist

Newsletter of the Irish Ergonomics Society

<http://www.ergonomics.ie/IES.html>

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Feature Personality:

Patrick Donohue MIES

An Irish Engineer/Ergonomist working in Australia.



Patrick Donohue who is originally from Dublin, works as a consulting engineer and ergonomist based in Sydney, Australia. He is a qualified production engineer, B.Sc.(Eng.), M.A. (TCD) & a pure design engineer, M.E.D. (UCD).

He specialises in design and analysis of systems. This is focussed on the pre-manufacture phase of the design, since detail design rarely solves any errant concept design decisions. The form of system covered in his role as a consultant ranges from analysing shop-floor industrial systems covering tools, tasks and plant, to the more complex, safety-critical system, e.g. mining equipment and function allocation in train sets.

By various steps in his career, Patrick has specialised progressively in (i) manufacturing, (ii) systems analysis, (iii) ergonomics/human factors, and finally (iv) human/machine/system design. This permits him to work as a consultant assessing the total design function and optimising the operational aspect of joint engineering and human systems. Of particular concern is the chasm he finds between the primary contract and tendering stage of a project to the

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downstream in-situ problems of OHS and productivity found in practice. Surprisingly little operational knowledge is input to the contract process. He has authored some 400 technical and expert reports, for commercial and legal clients respectively, in various design, OHS, product and public liability scenarios

Working in OZ

By Patrick Donohue

G'day folks! As an Irish engineer and Ergonomist in Oz, the scene is not too different in some aspects to Ireland. The Human Factors & Ergonomics Society of Australia is, like the IES, a young society. Few engineers are members so OHS is a major issue, not design.

Most of my work is technical assessment of existing designs, much of it being legal oriented. The scope is vast since Australia has an industrial landscape far broader than Ireland, for obvious reasons. Hence system design and configuration is a core issue: underground remote control continuous miner machines, train cab design - or rather lack of it, are amongst my previous large scale research and consulting work. Bread and butter issues like tribological (lubrication and wear) analysis of pedestrian slip and fall accidents, loss of situation awareness in assembly machine operation, leading to entanglement, form the bulk of my daily round. Virtually everything I undertake through my company [Occupational Forensics P/L] is a mix of the content of the MED degree from UCD and ergonomics, Physical ergonomics was the main element in the past but now cognitive ergonomics is increasing in relevance.

Freedom is knowledge all right, but some knowledge is dangerous. There is a standard reaction to keeping a lid on system failures. *Concept design* is my forte (much thanks to Mr. Steve Chan and Dr. Brendan McCormack at UCD '91/'92) and, whilst lawyers like to know of this, and how it easily proves a major stuff up occurred, it is amazing to find fellow production and design engineers not so enthusiastic about it. Design science, as it is now known links up with ergonomics very neatly, especially with mode and situation awareness issues, in joint machine and human control. Cybernetics helps too in identifying open and closed system states for operational constraints and upstream design. Function allocation and design overlap is a related issue in this area, well known I believe to one

Irl. ergonomist – Enda Fallon.

As you can see the arena is broad and though concept design documentation is rarely found for my legal clients, much to their delight, since its proves part of their cause (incompetent engineering design), it is a shame that I still see design and fabrication of systems continuing to this day that violate some basic tenets of systems and ergonomics.

An example would highlight the dangers. Large multi-position (>2 positions) foot pedals cannot provide suitable interfaces for continuous human operation - it generates fatigue as soon as it is encountered. Fatigue *necessarily* arises by virtue of the static posture/ isometric force levels. That a fellow human is asked to apply such physical effort to suspend a train brake system, ostensibly to provide some assurance of safety in a train cab, this dead-man automatically creates physical and cognitive incapacitation. Greater loss of safety results! Even though train drivers frequently go off work ill, the situation is left to fester. New cab designs are fabricated, even exported, to this very day, with no account taken of this performance (or active) error of operation, due to the parent latent error of design. A slight variant of Edmund Burke's maxim comes to mind - for poor design! I do hope Luas does not have this system in place?

Generally the marriage existing between systems design, ergonomic science and engineering disciplines of varying kinds leaves much to be desired. Yet there is hardly a system that does not encompass all of these three in some form. Interaction of hazards and non-identification of hazard sets is well known now (read: no such thing as safe software for complex systems) but sometimes is still placed in the too-hard basket. Pity! It ensures post design risk management retains its in-vogue signature, even though sitting atop a slightly crumbling pedestal.

The legal related work is satisfying from an intellectual standpoint but there is an obvious sense of wanting to correct the mess before its gets constructed. To that end my doctorate seeks to link concept design with mode awareness, by reason of redistribution of mode. This is two-fold: an explicit flag/ abstraction for the cognitive intention of human (who directly inserts it) and, distinctly, an equivalent representing the 'currency' of the open or closed state of the 'assisting' machine system. Automatic comparison by a parallel system 'may' lessen task overload. "Unplanned movements", a euphemism in

the mining industry, may otherwise result. As to how generic its use, that remains to be determined. It is bizarre that if we accept that "the task shall fit the man" (Grandjean) then it seems blindingly obvious that no system should ever be permitted by defective design to overrule a human who acts solely according to accepted, trained-for, historical actions. Design for such foreseeable operability conditions of the machine system should be actively catered for. The 2nd Law of Thermo. plainly identifies that no system will ever be immune from such open-loop actions. If we can, we should reign in that loop to at least bound it to some degree.

Feature Article

Annual Conference and AGM @ NCAD 28 April 2005

Award of Fellowship to Professor Ray Fuller at the IES Conference 2005



Professor Ray Fuller (TCD) elected a Fellow of the Irish Ergonomics Society is pictured above receiving the award from Mr. Steve Chan (Chairman of the IES)



Professor Ray Fuller (TCD), is pictured above delivering the Society Lecture "The Future of Driver Training and Assessment" at the 2005 IES Annual Conference at the NCAD, Dublin

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Chairman's Report

Summary

The executive committee met six times including an extra-ordinary meeting due to our involvement with the RISK conference. Membership has grown by 50% and the membership register has been up-dated and put onto the IES web site <http://www.ergonomics.ie/IES.html>. The web site is up and running. Three issues of the newsletter "The Irish Ergonomist" were published last year and two of the feature articles (reviews of the 2004 conference) were published in the IEA Newsletter. The working groups have continued to produce valuable work and the IES has consolidated its links with both national and international bodies.

The IES also took part in the RISK conference in April 2005 where we sourced most of the speakers.

A full report is available on the web site <http://www.ergonomics.ie/IES.html>

PODUCTS ON DISPLAY

The conference this year also had a display of manufactured goods by companies with a keen interest in ergonomics. These are shown below:

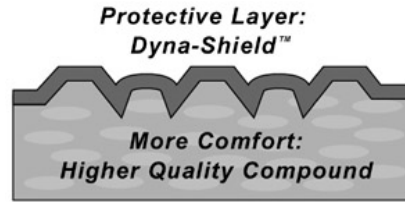


KOS Ergonomic Solutions specialise in products, which alleviate, but more importantly, help prevent most types of posture-related disorders. The award winning RH Logic 4 chair is designed to follow your movements and give you exactly the right support in relation to your height and weight.

A comprehensive range of aids to manual handling, ergonomic accessories and RSI solutions can be viewed on their website www.kos.ie or phone 0504 43341



The Next Generation of Anti-Fatigue Matting Dyna-Shield™



At the recent 2005 Irish Ergonomics Society conference Matting Systems displayed a selection of mats and matting products and introduced the next generation of Dyna-Shield™ anti-fatigue matting to the Irish market.

The next generation of anti-fatigue matting is made of a newly formulated compound with Dyna-Shield™, and a revolutionary process perfected by NOTRAX® that creates a protective layer on the sponge surface. Dyna-Shield™ is a tough barrier that is more resistant to wear than traditional sponge matting. In addition to the longer life from this greater wear resistance, the Dyna-Shield™ mats also outperform the others in tear resistance and tensile strength capabilities! The result is an incredibly durable top surface that provides unmatched traction for the worker and further enhances the anti-fatigue comfort of the mat.

Matting Systems are distributors for the NOTRAX® range of products, offering you



the widest selection of matting to meet all your ergonomic, anti-fatigue, safety, industrial and commercial mat and matting requirements.

Full details of the NOTRAX® range of matting products are available from Matting Systems.

For further details contact: Dermot Cox-Kearns at Matting Systems, Ballinahinch, Ashford, Co. Wicklow. Tel: 0404 42782 or 087 2575059, Email: Dermot@matting-systems.com www.matting-systems.com

IES NEWS

New committee

The new committee elected at the IES AGM is as follows:

Mr. Stephen Chan - Chairman
Dr. Leonard O'Sullivan - Secretary
Mr. Gerry Holmes - Treasurer
Ms. Eleanor McMahon
Ms. Fiona Moclair
Ms. Liz Doyle Fleming
Dr. Sara L. Cox - Newsletter Editor

Membership Issues:

Membership Certificates

The Society has issued new certificates to all fully paid up members. If you have not received a certificate and you are entitled to one, please contact Dr. Leonard O'Sullivan

Email: Leonard.osullivan@ul.ie

Tel: +353 61 234249

New Members

The IES would like to welcome the following new members to the Society:

Mr. Mark Kelly— Student member

HSA National Occupational Health Strategy

The IES has been invited to have representation by the Health and Safety Authority (HSA) on a steering group that will work on objectives for a National Occupational Health Strategy. The HSA envisages that the steering group will formulate a strategy over the coming months that will be implemented in the years ahead. The strategy document formulation which will commence in July 2005 will be prepared following consultation with various stakeholders in Ireland. The HSA informs that this will inform Government on decision-making in the prevention of occupational illnesses and diseases and workplace health promotion. The IES is very pleased to be invited to participate in this steering group. This is the third consultation by the Health and Safety Authority with the Irish Ergonomics Society in the last 12 months.

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IES Annual Conference 2006

Invitation and call for papers

The IES Annual Conference 2006 will take place on Thursday March 30th 2006. The theme for the conference is "The Role of Ergonomics in Future Employment Patterns" and papers will be published in the Irish Ergonomics Review 2006. Individuals interested in presenting at the conference should submit a one page abstract to Dr. Leonard O'Sullivan (Secretary of the IES).

Standards Working Group

The National Standards Authority of Ireland (NSAI) has invited the IES to co-ordinate contributions from Ireland on Ergonomics Standards Development. The IES has appointed a Standards Working Group to coordinate this work that will have direct input into CEN TC 122 (Ergonomics Standards). Currently TC 122 has nine active work areas, but to date, there has been minimal contribution from Ireland. The IES is issuing an open call for expressions of interest for individuals to participate in the Working Group. Members of the group are required to demonstrate reasonable competence in the specific TC122 work area that they wish to contribute. For further information visit http://www.ergonomics.ie/about_workinggroups.htm

The Web page

The web page is now up and running. The details for valid paid Members has also been posted on it. Please check and make sure that this information is correct.

There are also areas where the editor would welcome suggestions, especially for the information section. Contributions are welcome.

Email web editor: Leonard.osullivan@ul.ie

Note from the Secretary

I wish to point out that the use of the IES logo is reserved for official use by the Irish Ergonomics Society. Members are not to use the IES logo on their business or personal communication medium unless authorised by the IES.

Dr. Leonard O'Sullivan

IES Working Group news

- Ergonomics in School Group

Report of the Ergonomics in Schools Working Group to the Irish Ergonomics Society AGM

The membership of the group is :

Sara Dockrell, (chair) School of Physiotherapy, Trinity College, Dublin.

Enda Fallon, Centre for Occupational Health and Safety, Dept. of Industrial Engineering, NUI, Galway.

Martina Kelly, Centre for Occupational Health and Safety, Dept. of Industrial Engineering, NUI, Galway.

Bridget Masterson, Intel, Leixlip

The group submitted the revised draft of a paper entitled ' *School childrens' use of computers and teachers' education in computer ergonomics*' to the Ergonomics journal in November 2004 and are currently awaiting details from the editor.

Arising out of the findings of the above named study, the Group is currently in the process of developing guidelines for teachers, with a working title "*Computer Ergonomics for Teachers*". The method(s) of dissemination of the guidelines has yet to be decided.

The group has submitted information relating to background, membership, action plan, and publications to the IES website. Thanks to Leonard for the website.

Sara Dockrell 22/04/05

What's happening out there:

INTERNATIONAL ERGONOMICS ASSOCIATION



International Ergonomics Association

news letter can be accessed electronically on the web address

[Http://www.iea.cc/](http://www.iea.cc/)



16th World Congress on Ergonomics IEA2006:

proposals pour in continuously

Since spring this year the submission of proposals has been open. You can follow the progress on the website www.iea2006.org under Program. Click to different pages to see which plenary papers, parallel sessions, multi session symposia, interactive sessions have been proposed. Many of these allow more abstracts, so please feel free to react. Under Abstracts you find the abstract submission pages. Please note that the submission closes on October 1st 2005. As organizers we are very positive about the diversity of proposals and kinds of sessions. These implicate that you will not only be able to attend most interesting oral sessions, but also to be an active participant in discussions and 'hands on' sessions.

The congress really lives amongst the ergonomics society over the world. All IEA Committees, all IEA Technical Groups and many other networks will organize meetings, most of which are open for any participant. Many social activities will be arranged, the congress party a memorable event: not much like a banquet, though a wide selection of good food and drinks will be provided. Great music, and dance for those who like to.

Finally the website gives a brief impression of Maastricht and surroundings. Dutch people like Maastricht as the nicest place to spend a long weekend of relaxation, shopping and to enjoy splendid food and a warm atmosphere.

We look forward to meeting you from 10-14 July 2006!

Ernst Koningsveld
IEA2006 Congress Chair

INTERNATIONAL ERGONOMICS ASSOCIATION (IEA) K.U. SMITH STUDENT AWARD
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Dr. Leonard O'Sullivan

FEES has recently appointed Kamiel Vanwonderghem as FEES Ambassador with the purpose of coordinating an European Union Task Force (EUTF). At present the primary role of the EUTF is to influence decisions regarding the programme of work for the European Union's 7th Framework Programme, the research budget of the EU. The current round of EU funding (6th Framework) is valued at €17.5 billion over four years, but this will be increased to approximately €30 billion in the 7th Framework which is due to start in 2007. To date there has been no specific ergonomics area within the framework programmes descriptions of work. Rather ergonomics and human factors has been inherent in parts of other areas within Nan technologies and Information Society Technologies. This makes the funding of ergonomics research exceptionally difficult. Unless a proposed research project fits into the Frameworks programme of work it will not be considered for evaluation. Hence, the first step to improving ergonomics research funding is to elevate the opportunities by influencing the programme of work at the drafting stage. This will be primary purpose of the EUTF moving forward.



Brigit Masterson

The IES Committee has decided to charge non IES Members and IES Members not in good standing a processing fee of €300 for EurErg renewals and applications. Given that IES EurErgs pay an addition fee to the IES Treasurer each year to cover addition costs, it was deemed inappropriate that these funds are used to subsidise costs incurred non IES members and IES members in good standing.

Health and Safety Authority

news:

Frank Power

The H S A is committed to developing a National Occupational Health Strategy. The Authority needs and wishes the support of organisations involved in health promotion activities in the workplace. To facilitate this the authority has establishing a Steering Group (see IES News)

For further information on H.S.A. activities see their Website at www.hsa.ie

Letters to the Editor

Air your voices in letters and opinions on any ergonomics related subject or respond to articles in the newsletter.

The news letter! We would like to extend the circulation of the newsletter so if anyone has a contact/contacts they think would be interested in it, could they please email me with a contact name, address and email address.

Many thanks

The Editor;
Dr. Sara L. Cox
Email: Sara.Cox@ul.ie

Events Diary:

Vacancies

CYBERG 2005 First Call for Papers "Meeting Diversity in Cyber/ Online Ergonomics"

Invitation to Participate

You are cordially invited to participate in the 4th International Cyberspace Conference on Ergonomics, CybErg 2005. This conference, CybErg 2005, is an online (virtual) conference on Ergonomics and Human Computer Interaction.

Conference Dates: **15 September to 15 October 2005.**

In the following areas:

- **Physical Ergonomics** (including repetitive strain injuries, work-rest schedules, anthropometry, work-related musculoskeletal disorders, workplace layout, manual materials handling, etc.)
- **Cognitive Ergonomics** (including human error, mental workload, naturalistic decision making, situation awareness, augmented cognition, adaptive interfaces, etc.)
- **Human Computer Interaction** (including computer-mediated communication, augmented reality, ubiquitous computing, online communities, cross-cultural interfaces, accessibility, etc.)
- **Health & Safety** (including occupational health and hygiene,

INTERNATIONAL ERGONOMICS ASSOCIATION (IEA) K.U. SMITH STUDENT AWARD

The IEA K.U. Smith Student Award honors a deserving student responsible for an application of or contribution to ergonomics/human factors (E/HF). The next award will be presented during the IEA 2006 XVIth Triennial Congress, scheduled to convene July 10-14, 2006, in Maastricht, Netherlands.

The Award winner will receive of a cash award of US \$3,000. Depending upon need, an additional stipend for travel to the Congress also may be awarded to the winner. Certificates will be awarded to two runners-up.

Any student enrolled in an accredited post-secondary institution (college, university, technical, or vocational school) worldwide is eligible to apply for the award. All areas of E/HF are eligible for consideration. Examples of applicable projects include an applied E/HF project, a human performance study or analysis, a design project or product, a research project undertaken in the laboratory or field, or a theoretical/conceptual contribution to E/HF.

A student wishing to apply for the award should submit the following to the IEA Student Award Committee:

- (1) Five copies of the abstract for a paper that the student has authored, that documents an application of or contribution to E/HF on the part of the student.
- (2) A resume for the student, with the student's name, full address, e-mail and phone numbers, institution enrolled in, experience, list of publications, and a summary of accomplishments and/or contributions related to the field of E/HF. The resume should be limited to 4 pages in length.
- (3) A letter from the student's academic advisor on institutional letterhead certifying the following: (1) that the paper described in the abstract was written by the student; (2) that the student was enrolled in the academic program at the time that work described in the abstract was carried out; (3) when the work described in the abstract was carried out; and (4) that the abstract is being submitted for the IEA K.U. Smith Student Award.

The IEA Student Award Committee will select the awardee and two runners-up using a two-stage procedure:

- (1) review of abstracts and resumes; and
- (2) review of full paper.

Students who have successfully passed the first stage will be invited by the IEA Student Award Committee to submit full papers for final selection. Two selection criteria will be used to select the awardee and runners-up:

- (1) Quality of contribution to E/HF, as documented in the full paper; and
- (2) Other accomplishments in and contributions to E/HF, as described in the resume.

Deadlines for the award process are as follows:

- | | |
|---------------|--|
| Oct. 2, 2005 | : Abstracts, resumes and advisor letters must be received by the IEA Student Award Committee (the address for submitting applications is given below). |
| Nov. 6, 2005 | : Applicants eligible for submitting full papers will be notified by this date. |
| Jan. 8, 2006 | : Full papers from eligible applicants must be received by the IEA Student Award Committee by this date. |
| Feb. 5, 2006 | : Applicants informed of results of award evaluation by this date. |
| March 1, 2006 | : Full paper by winner due to IEA 2006 Congress Program Committee by this date (visit www.iea2006.org/ for details). (NOTE: The IEA 2006 Congress Program Committee will reserve a slot for the award winner to present her/his paper. The winner does NOT have to meet the Oct. 1, 2005 deadline for submitting paper abstracts. However, the winner must submit her/his full paper to the IEA 2006 Congress Program Committee by March 1, 2006.) |

Applications for the IEA K.U. Smith Student Award should be sent to the Chair of the IEA Student Award Committee:

Chair: Prof. Michael Smith
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1513 University Avenue
Madison, WI 53706
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Email: mjsmith@engr.wisc.edu