

One of the challenges for the visual ergonomics profession is to ensure that the next generation is informed about visual ergonomics and knows how to apply its principles.

Some of the ways this can be achieved is through scientific publications in ergonomics and non-ergonomics journals, encouraging conference participation, presenting visual ergonomics content in public forums

and incorporating visual ergonomics education into non-ergonomics education programs.

This newsletter illustrates how our members are flying the flag for visual ergonomics, including a one page feature on visual ergonomics content within optometry courses in 5 different countries.

Thank you to everyone who contributed to this IEA VE newsletter. If you have any visual

ergonomics news, please don't be shy about telling us—it's great to hear news from academics *AND* practitioners from all around the world.

The International Ergonomics Association Triennial Congress, IEA2015, is coming up very soon. I hope to meet you in Melbourne, Australia, in August.

Jennifer Long

IEA Visual Ergonomics
TC Chairperson

Publications

- Howarth PA and Hodder SG. (2015) Subjective responses to display bezel characteristics. *Applied Ergonomics* 47: 253-258.

This article investigates whether reflections from glossy casings (bezels) around a computer display can contribute to eyestrain.

- Richter, H, Zetterberg C, Forsman M. Trapezius muscle activity increases during near work activity regardless of accommodation/vergence demand level. Published online 20 Feb 2015 *European Journal of Applied Physiology*.

This article describes how trapezius muscle activity increases during near work tasks and speculates whether this is linked to increased mental effort and visual attention while working.

- Penacchio O and Wilkins A. Visual discomfort and spatial distribution of Fourier energy. In press in *Vision Research*.

This article describes a way to predict whether an environment and its lighting is likely to cause discomfort and how an algorithm can be used to guide the design process to reduce the risk of discomfort.

Call for abstracts and papers

The Nordic Ergonomics Society Annual Conference will be held in Lillehammer, Norway, 1-4 November 2015. The closing date for submitting an abstract proposal is 15th May 2015. Abstracts will be peer-reviewed. For more information please see <http://nes2015.no/call%20for%20abstracts.html>

Upcoming Events

International Ergonomics Association World Congress, Melbourne Australia 9-14 August 2015. www.iea2015.org (will include visual ergonomics sessions)

Nordic Ergonomics Society Annual Conference, Lillehammer, Norway 1-4 November 2015 (will include sessions on visual ergonomics)

In the spotlight

- 👁️ **USA:** Jeffrey Anshel (optometrist) and Cynthia Purvis Roe (ergonomist) presented “Vision and posture in the workplace” at the National Ergonomics Conference and Exhibition, Las Vegas, in December 2014.
- 👁️ **NORWAY:** During the solar eclipse visible in Northern Europe on the 20th March 2015, Magne Helland was interviewed in a direct television broadcast by Dagbladet (one of the main national newspapers in Norway) and made front page news in Kongsberg, the town where the Norwegian school of optometry is located: http://www.laagendalsposten.no/V_ret_kan_delegge_for_solform_rkelsen-5-64-25892.html
- 👁️ **INDIA:** Sanjram Premjit Khanganba of the Human Factors & Applied Cognition Lab, Indian Institute of Technology Indore, will be chairing a doctoral consortium at IndiaHCI 2015 in December <http://www.indiahci2015.com/phd.html> and plans to raise awareness about cognitive and visual ergonomics.

Are you interested in serving on the IEA Visual Ergonomics Technical Committee?

The IEA Visual Ergonomics Technical Committee will celebrate its 6th birthday this year at the IEA2015 congress in Melbourne, Australia. The first two co-chairpersons of the IEA VE TC were Magne Helland (Norway) and Hans Richter (Sweden), assisted by committee members Jennifer Long (Australia), Marino Menozzi (Switzerland) and Catherine Burns (Canada). In 2012, Magne Helland stepped down as chairperson, and was replaced by Jennifer Long. The current committee consists of Jennifer Long and Hans Richter (co-chairs), Marino Menozzi and Magne Helland.

Our TC reports to the IEA, is responsible for ensuring that our TC functions smoothly and efficiently, plans and coordinates the visual ergonomics stream at the triennial IEA congress, maintains a database of VE TC members, updates the IEA VE website and where possible, promotes visual ergonomics and the IEA VE TC internationally. Some of our achievements include:

- 👁️ Two visual ergonomics parallel sessions and a joint parallel session with Work With Computer Systems at IEA2012 in Recife, Brazil.
- 👁️ This newsletter, which is published three times a year.
- 👁️ A special visual ergonomics edition of the journal *WORK* which was published in March 2014 and which featured 15 articles on visual ergonomics.
- 👁️ Participating in the development of a definition of visual ergonomics which was published as a letter to the editor in *Applied Ergonomics* in 2014.

The IEA has a rule that a chairperson (or co-chairperson) can only serve for 6 consecutive years. This means that Hans Richter will be standing down from his position as co-chair at the IEA2015 congress in Melbourne in August. Marino Menozzi has indicated that he is interested in taking on the role of co-chair with Jennifer Long, and Hans and Magne have each expressed an interest in remaining on the committee.

Are you interested in serving on the IEA Visual Ergonomics Technical Committee?

If you are interested, please send a **one page** document outlining who you are, what you do, any contributions you have made to the IEA VE TC in the past and why you would like to serve with us on the committee. Please send this to Jennifer Long at jlong@visualergonomics.com.au by the 10th June 2015. We are looking for 1-2 people to assist.

NEXT NEWSLETTER DEADLINE: 30th July 2015
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Visual ergonomics within optometry courses



India (by Chandan Shettigar)

There are approximately 400 institutions offering optometry courses in India, including a Diploma in Optometry, Bachelor of Optometry, Master of Optometry, M. Phil / integrated optometry (combined Bachelor and Masters degree). There are no national optometry competency standards in India; instead, there are various private boards which each claim to officially represent optometry in India. Visual ergonomics is included within optometry education in some institutions in India, but because there isn't a competency standard, in many optometry schools it is not a part of the curriculum. When included in the curriculum, it is usually discussed in the context of computer vision and ergonomics, general ergonomics, lighting and light sources. Some optometry schools include visual ergonomics as part of the subject "Occupational Optometry" within the undergraduate optometry program, while others teach it as a part of the postgraduate program.



Norway (by Magne Helland)

There is only one optometry program in Norway, at which an undergraduate and postgraduate program is taught. The undergraduate program complies with an optometry competency standard, which includes two topics related to visual ergonomics: computer vision syndrome and vision and driving. It includes a brief introduction to occupational optometry of approximately 6 lectures and a group assignment in which students analyze a work task and evaluate any visual ergonomics issues for the worker. A visual ergonomics course is also offered as part of the Masters degree program. Topics include ergonomics, legislation, occupational vision requirements, photometry, light and lighting, computer vision syndrome, eye protection, and special visual ergonomics issues related to low vision rehabilitation, ophthalmic lenses, ocular emergencies and colour vision.



USA (by Mark Rosenfield)

In the USA, students are required to complete a 4-year college degree before enrolling in a postgraduate degree in optometry. There are approximately 21 schools which offer an optometry program. To practice optometry, students need to first complete a standardized national board exam. There is a greater emphasis on ocular disease within the American optometry profession, so only minimal discussion of occupational optometry and ergonomics issues is included within most optometry courses.



Switzerland (by the Swiss Society of Optometry and Optics)

Since 2007, optometry students earn a BSc Optometry degree through the University of Applied Sciences Nordwestschweiz, Olten (<http://www.fhnw.ch/technik/bachelor/optometrie>). The syllabus has been adapted to comply with the European Diploma of ECOO (European Council of Optometry and Optics), the gold-standard of European optometric diploma. Optometrists (BSc Optom and dipl. Augenoptiker) are regulated through the cantonal government health authority departments. Eye examinations, screenings and contact lens fitting are all regulated. Core competencies addressed in the undergraduate degree which relate to visual ergonomics include task analysis, sunglasses and spectacle lenses, vision screening and services for those visually impaired (<http://www.fhnw.ch/technik/bachelor/optometrie/beruf>). Most Swiss optometrists start their education with an apprenticeship for Augenoptiker EFZ (ophthalmic optician/ 4 years education) combined with professional baccalaureate (Berufsmatura) followed by BSc studies in Olten. MSc or PhD continual studies are possible at partner Universities in several European countries. Today in Switzerland there are about 250 optometrists practicing (BSc, MSc, MAS or PhD of optometry) and they are required to complete continuing education with a credit point system, which was implemented by the Swiss Society of Optometry and Optics SSOO/ SBAO. www.sbao.ch.



Australia (by Jennifer Long)

To practice optometry in Australia, an optometrist must be registered with the Optometry Board of Australia and meet the requirements of the Optometry Australia entry-level competency standards for optometry 2014 (<http://onlinelibrary.wiley.com/doi/10.1111/cxo.12216/abstract>). Visual ergonomics content within the competency standard includes visual ergonomics, general ergonomics, lighting, eye protection, vision standards, task analysis, vision screening, legislation and occupational requirements for colour vision, aviation and driving. There are 5 universities which offer clinical optometry courses in Australia, three as an undergraduate optometry degree and two as a postgraduate (masters) optometry degree. Each degree course includes tuition on these topics to ensure students meet the requirements of the competency standard, but the actual content delivered varies between courses. Postgraduate research (e.g. Masters and PhD) and coursework (e.g. Masters) degrees in optometry are also available.