



# The 3<sup>rd</sup> International Iranian Ergonomics Webinar & The 4<sup>th</sup> Biennial Iranian Webinar on Ergonomics

March 3-4, 2021 - Shiraz, Iran



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## Webinar Bulletin

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## Introductory speech



The 3<sup>rd</sup> International Iranian Ergonomics conference and the 4<sup>th</sup> Biennial Iranian conference on Ergonomics" was held virtually (Webinar) from March 3 to March 4 in Shiraz, the cradle of culture in Iran.

Regarding COVID-19 pandemic and its outstanding effects on work systems resulting in the spread of teleworking, the theme of the webinar was selected as:

**"Ergonomics and emerging challenges: Mobile and teleworking"**

In this webinar, Shiraz University of Medical Sciences (SUMS) hosted professors and researchers who presented their latest scientific and research achievements in the field of Ergonomics.

SUMS held this webinar in collaboration with the Iranian Ergonomics/Human Factors Society and Ryerson University in order to pave the way for the exchange of views and experiences among national and international researchers and experts in ergonomics, and to lay the groundwork for university programs of ergonomics directed at product-oriented projects based on the needs of society and industry, as well as creativity and entrepreneurship.

Out of 303 submissions to the conference secretariat, 18 and 189 papers were accepted for oral and poster presentation, respectively. In addition, 8 keynote speeches were delivered by domestic and foreign professors, and two specialized panels were held with up-to-date and challenging topics on ergonomics issues. Besides, 10 applied ergonomics workshops were held.

Prof. Alireza Choobineh  
Scientific secretary





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## Members of the Executive Committee of the Webinar





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## Opening ceremony

The 3<sup>rd</sup> International Iranian Ergonomics conference and the 4<sup>th</sup> Biennial Iranian conference on Ergonomics started at 8:00 AM on Wednesday March 3<sup>rd</sup>, 2021 with opening remarks by Prof. Alireza Choobineh, the scientific secretary of the webinar.

Then, Prof. Abolfazl Zakerian, the president of the Iranian Ergonomics/Human Factors Society, Prof. Kathleen Mosier, the president of IEA, and Dr. Noorzaman Rashid, CEO of the Chartered Institute of Ergonomics and Human Factors delivered their speeches.





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### A review of the lectures at the opening ceremony

#### COVID-19 pandemic could not stop Iranian ergonomists' activities ...

The president of the Iranian Ergonomics/Human Factors Society began his speech by acknowledging those who had made scientific and executive contributions to the webinar and commemorating health martyrs during COVID-19 pandemic.

Prof. Zakerian stated that coronavirus disease could not prevent the development of ergonomics in the country through the activities of ergonomics specialists. He said that the scientific conference held by SUMS in the epidemic conditions was a valuable measure.

Pointing to the activities carried out by the Iranian Ergonomics/Human Factors Society, he said that holding biennial conferences since 2013 was a major step to promote and develop ergonomics in Iran. Stating that we would definitely have a different world after the pandemic, the faculty member of Tehran University of Medical Sciences said "To build a better future, we must conduct research and keep pace with the changes made in ergonomics".

He closed his speech saying that we took important steps in the field of ergonomics during the past few years, expressing hope that new generation of ergonomists would work harder to achieve the goals of ergonomics science and technology in the country.



Prof. Abolfazl Zakerian





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## A review of the lectures at the opening ceremony

Prof. Kathleen Mosier, as the conference invited speakers, delivered her speech on "Human factors and ergonomics challenges in designing the future of work". The President of the International Ergonomics Association spoke about the perspective and mission of the International Ergonomics Association and mentioned 7 areas of policy and goal of the association of which the seventh policy was preserving the future with emphasis on ergonomics and human factors.

"Technological changes have made the future of work more complex" said Prof. Mosier, adding that COVID-19 pandemic is accelerating the complexity of the future of work.

In the end, she said that a systemic approach to designing the future of work would be important for meeting future challenges.



Prof. Kathleen Mosier

The next keynote speaker was Dr. Noorzaman Rashid, CEO of the Chartered Institute of Ergonomics and Human Factors (CIEHF). His lecture addressed the ergonomics problems that the world was currently facing. He explained the current ergonomics problems stating the definition and position of ergonomics. He also explained the strategies of the CIEHF for responding to these challenges.

Dr. Noorzaman Rashid stated that the CIEHF established a COVID-19 response team to respond to the pandemic crisis and attracted more than 100 international volunteers to support research and provide advice and guidance. To do so, the emergency planning process and a gold-silver-bronze command structure were used to develop ergonomics-related instructions so that the government policies might be affected.

CEO of the CIEHF pointed to some of these instructions and expressed hope that the CIEHF would change into a stronger virtual professional institution operating at an international level. He said "the CIEHF enjoys diversity of thought so that it can resolve the ergonomics global issues more quickly".



Dr. Noorzaman Rashid





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## Keynote speakers

The Keynote speaker of the conference, Prof. Najmedin Meshkati, faculty member of University of Southern California, spoke about the Chernobyl disaster, Boeing 737 and medical errors from the viewpoint of micro and macro ergonomics.

He first mentioned the important industrial accidents happened in the past decades and listed the industrial and occupational environments in which most accidents occurred. Then, he spoke of the perspectives on human-system interactions and prevention of human errors. He also pointed to the root causes of the Chernobyl accident from the perspective of human-system interaction. He also mentioned the importance of health-care environments from the view of human-system interactions and human errors.



Prof. Najmedin Meshkati

Prof. Mohammad Abdoli-Eramaki began his lecture on biomechanics and ergonomics considerations in female population. He started his lecture by talking about the history of women's work and pointed out that in the recent decades, the participation rate of global labor force among women exceeded that among men, although men used to attend the workplace more frequently than women. However, less attention has been paid to the working environment design for female population.

Then, he mentioned the necessity of paying attention to the characteristics of women in working environment design pointing to anthropometric and biomechanical differences between men and women.

Dr. Abdoli-Eramaki then discussed the effects of pregnancy and wearing high-heeled shoes on body biomechanics. He also pointed to his research on the equipment designed to reduce biomechanical loads in women.



Prof. Mohammad Abdoli-Eramaki

Prof. Tammy Eger, faculty member of Laurentian University, School of Kinesiology and Health sciences, Canada, was another keynote speaker on the first day of the conference. She started her lecture by talking about "occupational vibration exposure, health risks, and prevention strategies" and continued with whole body, hand-arms, and feet- transmitted vibration, as well as vibration measurement standards.

She mentioned the effects of exposure to whole-body vibration and ergonomics risk factors on musculoskeletal injuries. She also talked about general prevention strategies including removal, replacement, engineering controls, administrative control measures, and personal protective equipment. She said that heavy machinery seat had an essential role in reducing the transmitted vibration to the driver's body. At the end, she thanked the executive committee of the conference.



Prof. Tammy Eger



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## Keynote speakers

Prof. Rashid Heidari-Moghaddam, faculty member of Hamadan University of Medical Sciences, began his lecture by talking about musculoskeletal disorders and exercise at home during the COVID-19 pandemic.

At the beginning of his lecture, he defined musculoskeletal disorders considering them as one of the most important injuries among employed and non-employed individuals.

He represented and explained common postures while working at home.

Then, he discussed the prevalence of musculoskeletal disorders in different body regions as well as different types of common musculoskeletal disorders and the factors affecting them applying an ergonomics approach.

Finally, he emphasized on the importance of exercise for prevention of musculoskeletal disorders, especially during the COVID-19 pandemic.



Prof. Rashid Heidari-Moghaddam

Prof. Alireza Choobineh, faculty member of Shiraz University of Medical Sciences, started his lecture by talking about ergonomics considerations in mobile and teleworking. Dr. Choobineh talked about the increasing emergence and use of Portable Information Devices (PIDs) and the injuries caused by using them. Finger, hand, or wrist injuries and turtle back were introduced as the most common musculoskeletal disorders in PIDs users. The prevention methods and ergonomics measures as well as the right ways to hold smartphones, work/rest schedules for people working with PIDs, e-learning challenges, and suggested solutions were also discussed next.



Prof. Alireza Choobineh

Dr. Rosanna Cousins, associate professor of occupational health psychology at Liverpool Hope University, talked about the effects of practical ergonomics measures on the promotion of safety and health, considering the challenges of teleworking during the COVID-19 pandemic. She also talked about occupational health problems and the impacts of the COVID-19 pandemic on employees' work stress. She discussed the history of the Ergonomics Research Society in England and its role in promoting occupational health and safety. At the end, she discussed the future directions for ergonomics research and the need for addressing emerging challenges and providing interventional solutions.



Dr. Rosanna Cousins



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## First day panel: Job opportunities for Iranian ergonomists and upcoming challenges

The first day's 2-hour panel entitled "Job opportunities for Iranian ergonomists and upcoming challenges" was held by Prof. Majid Motamedzadeh (panel moderator), Prof. Mohammad Javad Jafari, Dr. Yahya Khosravi and Mr. Mohammad Sadegh Sohrabi. The panel members discussed the legal challenges of employing ergonomics graduates. Also, two MSc graduates of Ergonomics talked about the challenges students would face after graduation. In addition to discussing job opportunities for ergonomists, the panel members and a number of students exchanged views on the strategies to improve job opportunities for MSc graduates of Ergonomics. Finally, the panel decided to form a specialized work group to work on this issue and do necessary actions to improve job opportunities for Iranian ergonomists.







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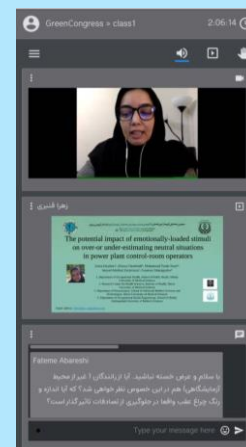
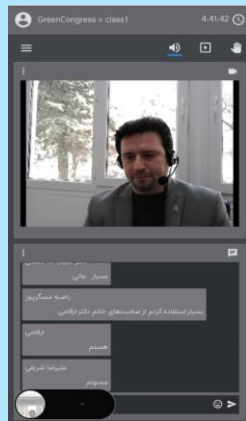
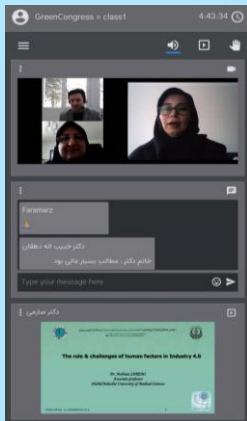
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## Oral presentations on the second day

*On the second day, 6 papers on cognitive ergonomics and 6 papers on macroergonomics were presented orally.*





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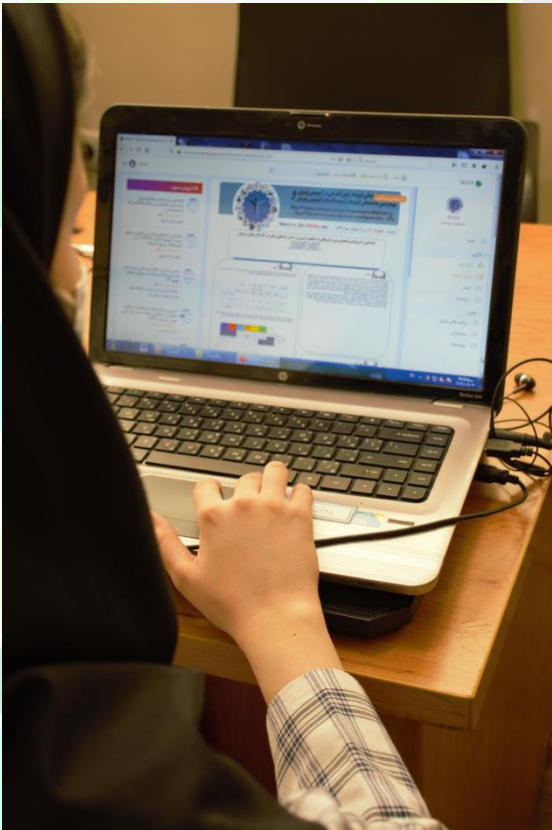
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## Poster Presentation

During the two – day webinar, the conference attendees could view 189 uploaded posters on the webinar website and asked their questions using the chat box related to each poster. The authors provided appropriate answers.





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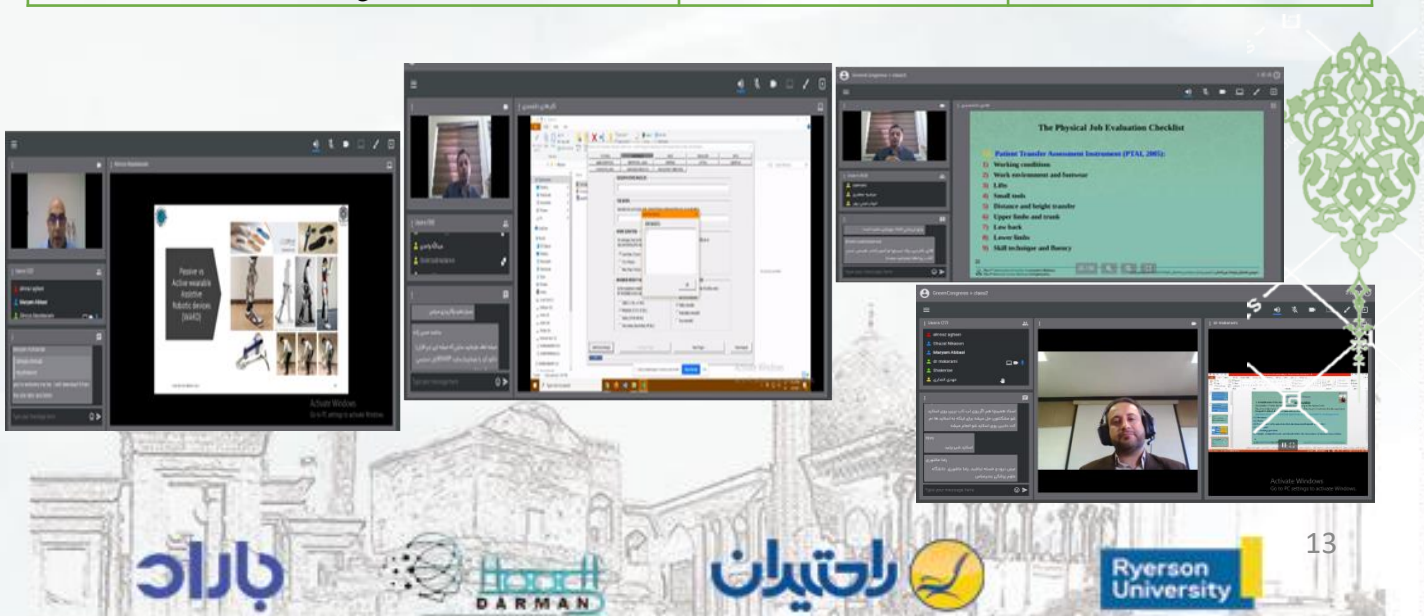
## Workshops presented

### Day one: 3<sup>rd</sup> March 2021

Title	Lecturer	Number of participants
Development and validation of ergonomics evaluation criteria and surveys	Dr. Rosanna Cousins & Dr. Hamidreza Mokarami	110
Advanced modeling in ergonomics	Prof. Mohammad Taghi Karimi	94
Application of motion capture system in ergonomics studies	Mr. Milad Gholami	74
Patenting intellectual properties	Dr. Milad Derakhshan	75

### Day two: 4<sup>th</sup> March 2021

Title	Lecturer	Number of participants
Principles of products ergonomic design	Prof. Iman Dianat	108
Application of 3DSSPP in ergonomics analysis	Dr. Mansour Ziaei	65
Assistive wearable robotics	Dr. Alireza Abouhossein	57
Risk perception and neuroergonomics	Dr. Shirazeh Arghami	52
The physical job evaluation checklist	Dr. Hadi Daneshmandi	61
Evaluation and empowerment of cognitive function in neuroergonomics	Ms. Akaram Sadat Jafari	39





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## Wide acceptance of the webinar by attendees



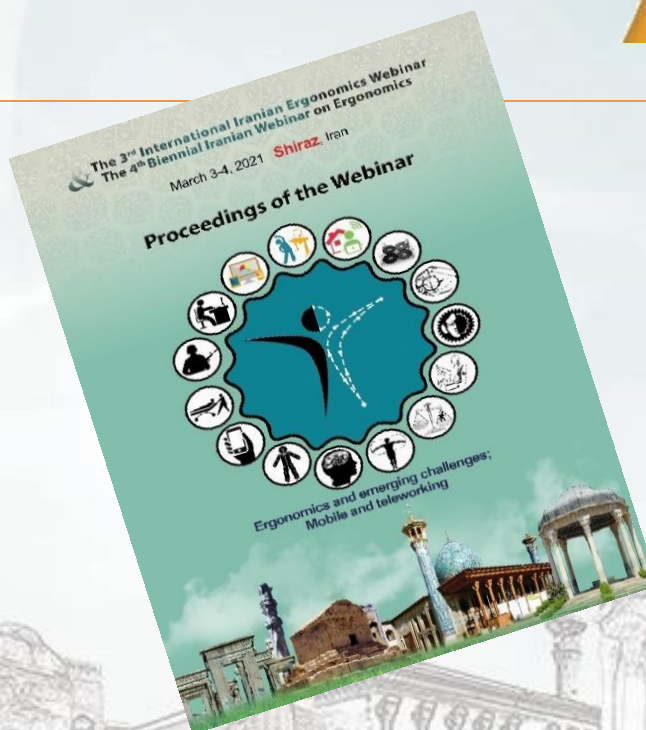
Dr. Reza Kazemi

Dr. Reza Kazemi, assistant professor of ergonomics at Shiraz University of Medical Sciences and executive secretary of the webinar, declared the wide acceptance of the conference and said:

“The first day of the conference was a complete success. As expected, in the first hour of the conference, more than 300 participants joined us. Also, about 800 active attendees visited different auditoriums.”

He added “As a member of the executive committee of the conference, I would like to thank all participants for attending the conference and encouraging the executive staff. I would also like to thank my dear colleagues who attempted tirelessly to hold such a comprehensive webinar. I hope the second day of the conference will also be held successfully and meet the attendees' satisfaction”.

## Proceedings of the webinar:





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### Second day panel: The 4<sup>th</sup> Industrial Revolution and orientation of ergonomics standards

In this 2-hour panel, Dr. Shirazeh Arghami, associate professor at Zanjan University of Medical Sciences, talked about the trend of industrial revolutions and the social effects of each revolution. She also talked about different workforce generations and employees' positive and negative attitudes. She emphasized that workplace and workforce management would face new challenges due to the presence of the fifth generation in the workplace. Then, Dr. Mahnaz Saremi, associate professor at Shahid Beheshti University of Medical Sciences, talked about the advantages and disadvantages of technology trends of the 4<sup>th</sup> industrial revolution as well as the basics of human factors that could contribute to better understanding of the changes caused by the 4<sup>th</sup> industrial revolution.

Next, Dr. Mostafa Pouyakian, assistant professor at Shahid Beheshti University of Medical Sciences, pointed to the most important technology trends of the 4<sup>th</sup> industrial revolution, such as 3D printers, internet of things, self-driving cars, smart cities, wearable gadgets and implantable technologies, as well as some negative effects of new technology trends such as increasing distraction, identity theft, invasion of privacy, permanent availability, increased complexity and demographic changes and the need to rethink the definition of work and organization in the 4<sup>th</sup> Industrial Revolution. He summarized the subjects and pointed to the profound changes in the nature of work and life brought about by the 4<sup>th</sup> Industrial Revolution. He coined the word "Cybergonomics for knowledge of ergonomics in the 4<sup>th</sup> Industrial Revolution. He added "Cybergonomics is made up of the three words Cyber, Ergo and Nomos". It refers to cyberspace studies of life and work or the digital information world and emerging technology trends of the 4<sup>th</sup> and 5<sup>th</sup> Industrial revolutions. "Cybergonomics" refers to the study of aspects and challenges of emerging technology trends of the 4<sup>th</sup> and 5<sup>th</sup> Industrial Revolutions in order to adjust these technology trends to our physical, mental and spiritual limitations and capabilities in life and workplace".





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## Book unveiling ceremony



At the book unveiling ceremony of "Essentials of Ergonomics and Human Factors Engineering", Prof. Alireza Choobineh explained the book writing and publishing process. He said that the goal of writing this book was to provide a reference book that could meet the needs of ergonomics students and experts. Prof. Choobineh noted that the process of writing this book took four years.

This book is the result of the collaborative efforts of a group consisting of 40 Iranian ergonomics experts and professors. The book has 7 sections, 45 chapters and 916 pages in quarto format.

The scientific editor of the book stated that in the near future, a special online ceremony would be held with the presence of the book chapters writers and other enthusiasts to introduce the book.

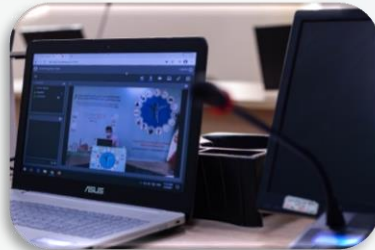
In conclusion, Prof. Choobineh declared that in order to encourage the students who are active in ergonomics research and education, Prof. Abdoli-Eramaki, on behalf of Ryerson University, and Prof. Zakerian, on behalf of the Iranian Ergonomics/Human Factors Society, each granted five volumes of the book to the students who had oral presentation in the webinar.



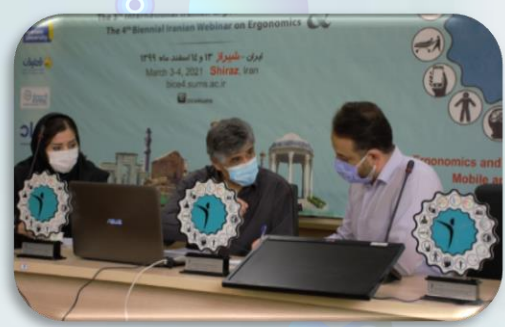


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## Behind the Scenes





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Closing ceremony





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## A glance at the webinar

- Number of registrants: **450**
- Average presence time for each attendee: **4 hours**
- Number of opening and keynote lectures: **8 lectures**
- Number of oral presentations: **18 lectures**
- Number of poster presentations: **189 posters**
- Number of workshops : **10**

