

# FPE Impact Grant Projects from Thailand and Malaysia Completed

Foundation for Professional Ergonomics (FPE) Impact Grants provide seed funding for small (pilot) projects that support the development of professional ergonomics worldwide.

The two latest projects address:

- Certification system and core competencies for professional ergonomists in Thailand.
- Investigation of the ergonomic risks common to workers in the batik industry in Malaysia.

## New Ergonomics Certification Program in Thailand

With the support of the FPE impact grant program, Dr. Manida Neubert and her team of investigators developed a certification system and core competencies for professional ergonomists in Thailand. This is a particularly timely initiative since Thailand is rapidly incorporating modern technology and automation into its manufacturing processes, and there are no professional standards for those providing human factors and ergonomics (HFE) assistance. Moreover, the coverage of HFE topics in university curricula is uneven.

The investigators compiled details about HFE education in Thailand as well as needs for HFE services by Thai industries. This information was used to identify educational competencies and deficiencies and to develop a pilot HFE certification program that is consistent with other certification bodies endorsed by the IEA. The certification program establishes a guideline for knowledge and skill requirements for professional ergonomists in Thailand which will, in turn, improve productivity and safety in Thai manufacturing and service industries.

| Certification  | Education  | Experience   | Renewal  |
|--|--|--|--|
| <div style="border: 1px solid #2c5e8c; padding: 5px;"> <div style="display: flex; align-items: center;"> <div style="font-size: 2em; margin-right: 10px;">L</div> <div> <p><b>Associate Professional Ergonomist (APEX)</b></p> <ul style="list-style-type: none"> <li>Physical (APEP)</li> <li>Cognitive (APEC)</li> <li>Macro (AEM)</li> </ul> </div> </div> </div> | <div style="border: 1px solid #2c5e8c; padding: 5px;"> <p>Knowledge &amp; skills required to achieve competency areas and contexts:</p> <ul style="list-style-type: none"> <li>Bachelor degree or higher</li> <li>Basic knowledge</li> <li>Domain-specific HFE knowledge                             <ul style="list-style-type: none"> <li>• Physical</li> <li>• Cognitive</li> <li>• Macro</li> </ul> </li> </ul> </div> | <div style="border: 1px solid #2c5e8c; padding: 5px;"> <p>Domain-specific projects/research</p> </div>   | <div style="border: 1px solid #2c5e8c; padding: 5px;"> <p>Domain-specific continuing education and projects/research</p> </div>            |
| <div style="border: 1px solid #2c5e8c; padding: 5px;"> <div style="display: flex; align-items: center;"> <div style="font-size: 2em; margin-right: 10px;">L</div> <div> <p><b>Certified Professional Ergonomist (CPE)</b></p> </div> </div> </div>   | <div style="border: 1px solid #2c5e8c; padding: 5px;"> <ul style="list-style-type: none"> <li>Bachelor degree or higher</li> <li>Basic knowledge</li> <li>Specific HFE knowledge (all domains)</li> </ul> </div>   | <div style="border: 1px solid #2c5e8c; padding: 5px;"> <ul style="list-style-type: none"> <li>HFE work experience at least 2 years</li> <li>Projects/research covered at least 2 domains</li> </ul> </div> | <div style="border: 1px solid #2c5e8c; padding: 5px;"> <p>Continuing education and projects/research covered at least 2 domains</p> </div> |

*Overview of certification system for professional ergonomists in Thailand.*

If you would like to learn more about this effort or would like to support similar efforts by FPE, please contact Professor Waldemar Karwowski [wkarwowski@gmail.com](mailto:wkarwowski@gmail.com) or Dr. Harvey Cohen [harvey@erroranalysis.com](mailto:harvey@erroranalysis.com).

### *Applying Ergonomics to Reduce Musculoskeletal Risks for Malaysian Batik Workers*

With the support of the FPE impact grant program, Dr. Dian Darius of the National Defense University of Malaysia and Dr. Darliana Mohammad of the Universiti Malaysia Kelantan investigated the ergonomic risks common to workers in the batik industry. Batik is a traditional textile artwork produced by hand in Malaysia and Southeast Asia. More than 60% of batik workers have been found to suffer from musculoskeletal problems due to awkward postures.

The investigators made detailed observations of batik artisans using recognized analysis techniques to assess ergonomic risks under various postures and working conditions. They also conducted a study that measured muscle loading during batik painting with typical postures. A wide variety of design options for a stool were evaluated with user input, and a final design was selected for use by batik workers. The stool will help reduce ergonomic stresses, enabling the artisans to remain active and safe in an industry that is important to Malaysian culture. Other interventions, including improved lighting and adjustable work surfaces, were recommended as well. The investigators plan to present their results at several ergonomics conferences and journals.



*Batik painting Posture 2 for RULA Assessment*

If you would like to learn more about this effort or would like to support similar efforts by FPE, please contact Professor Waldemar Karwowski [wkarwowski@gmail.com](mailto:wkarwowski@gmail.com) or Dr. Harvey Cohen [harvey@erroranalysis.com](mailto:harvey@erroranalysis.com).