

## **Curriculum Vitae - Gary B. Marquis**

### **1. Personal information**

Date of Birth: March 1, 1957

### **2. Education**

- 1979 B.Sc., General Engineering, University of Illinois at Urbana-Champaign
- 1984 M.Sc., Mechanical Engineering, University of Illinois at Urbana-Champaign
- 1995 D.Sc. Mechanical Engineering, Helsinki University of Technology, Topic: "High cycle spectrum fatigue of welded components"



### **3. Adjunct Professorships**

Affiliated Professor, Royal Institute of Technology (KTH), Stockholm, Division of Lightweight Structures, 2012 - 2015

### **4. Present Employment**

Professor of Mechanics of Materials (Lujuusoppi), Aalto University School of Engineering, Department of Applied Mechanics, 2008–present

### **5. Previous Positions**

- Professor of Steel Structures, Department of Mechanical Engineering, Lappeenranta University of Technology, 2001 – 2008
- Senior Research Scientist, VTT Manufacturing Technology, Espoo, 1994 - 2001
- Research Scientist, VTT Metals Laboratory, Espoo, Fatigue and fracture mechanics testing and analysis, 1988 - 1993
- Research Fellow, Department of Theoretical Mechanics, Silesian Technical University, Gliwice, Poland. Stress, vibration and failure analysis of mechanical components; Finite element analysis, 1985 - 1987
- Teaching and research assistant, Department of Mechanical and Industrial Engineering, University of Illinois, Urbana-Champaign, IL, 1982 - 1984
- Staff Engineer, Polytechnic, Inc., Chicago, Illinois, 1981 - 1982
- Project Engineer, Western Electric Co., Rolling Meadows, Illinois, 1979 - 1981

### **6. Doctoral Theses Supervision**

- Juha Kilkki 2002 "Automated formulation of optimisation models for steel beam structures" – passed with honours
- Mika Bäckström 2003 "Multiaxial fatigue life assessment of welds based on nominal and hot spot stresses"
- Xiaoyan Li 2003 "Effect of mechanical and geometric mismatching on fatigue and damage of welded joints"
- Tapani Halme 2004 "Novel techniques and applications in generalized beam theory"

- Timo Björk 2005 “Ductility and ultimate strength of cold-formed rectangular hollow section joints at sub-zero temperatures” – passed with honours
- Veli-Matti Lihavainen 2006 “A novel approach for assessing the fatigue strength of ultrasonic impact treated welded structures”
- Ilkka Poutiainen 2006 “A modified structural stress method for fatigue assessment of welded structures”
- Ahti Oinonen 2011 “Damage modelling procedure and positioning optimization of adhesively reinforced frictional interfaces”

## **7. Scientific Expert Positions**

### *Assignments as examiner opponent*

Doctoral thesis examiner or pre-examiner – more than 20 times in Finland, Sweden, Norway, Denmark, Switzerland and South Africa

### *Review referee assignments*

- Member of the editorial board and principal reviewer *Welding in the World*, 2009-present
- Guest editor for *International Journal of Fatigue* special issue on Fatigue Design and Material Defects, 2012
- Member of the Editorial Board, *Journal of the Italian Group of Fracture*, 2010 – present
- Associate Editor, *Journal Mechanics and Industry*, 2012-2014

Reviewer for the following publications *International Journal of Fatigue*, *Fatigue and Fracture of Engineering Materials and Structures*, *ASTM*, *ASME*, and *International Journal of Fracture*, *Welding in the World*, *Computational Materials Science*, *International Journal of Solids and Structures*, *Journal of Materials Processing*, and *Materials Science and Engineering A*. Normally 15-20 articles per year for the past 10 years. Has also been a referee for numerous conference special publications.

### *International project referee assignments*

Funding application evaluator – The European Science Foundation; 2005 - present  
Funding application evaluator – The Research Council of Norway; 2004 – present

## **8. Scientific Positions of Trust and Administration**

### *Important International Trust Positions*

- Director, International Institute of Welding, The IIW was founded in 1948 by 13 countries. The IIW is today the largest worldwide network for welding and joining technologies. 55 Member Countries, representing experts in the various fields of welding and joining. Term of office 2011-2014
- Chairman of the Technical Management Board of the International Institute of Welding, This Board oversees the functions and cooperation of the 23 Technical working units in the organisation. The goal is to act as the world-wide network for knowledge exchange of joining technologies to improve the global quality of life, Term of office 2011- 2014
- Chairman of the International Institute of Welding Commission XIII - Fatigue of Components and Structures, Initially elected in 2006 and re-elected in 2009 and 2012. The commission constitutes 50 active members from 20 countries, 2006-2015
- Member of the IIW Technical Management Board, 2008 – 2011
- IIW International Accreditation Board working group chairman – Weld designer curriculum guideline, 2004-2006

### *Administration*

- Chairman of the Aalto University School of Engineering Dean Search Committee, 2012
- Head of the Aalto University English Language MS programme in Mechanical Engineering, 2010 - present
- Member of the School of Engineering Tenure Board, 2011 – present
- Member of the Aalto University ADD Laboratory Academic Steering Committee, 2012-present
- Member of the Teaching Evaluation Exercise board for Mechanical Engineering, 2011
- Director Laboratory of Steel Structures (at LUT), 2001-2007
- Chairman of the international programs steering group (at LUT), 2003-2008
- Deputy Head of Mechanical Engineering Department, 2005 – 2006
- Scientific Council member, 2002 – 2006
- Professors' Union, local chapter steering group member, 2005 – 2007

### **9. Foreign visits**

- Visiting professor, EPFL, Lausanne, Switzerland, 1.10 - 31.11.2012
- Visiting research professor, Kyushu University, Fukuoka, Japan, 1.10 - 11.12.2000
- Visiting research scientist, University of Illinois at Urbana-Champaign, USA, 1.11.1995 - 31.10.1996

### **10. Scientific acknowledgements and awards**

#### *Invited, Plenary and Keynote Lectures*

International Conference on Fatigue Design, 23-24.11.2011, Senlis, France

International Conference on Advances in Welding Science and Technology, 21-22.10.2011, Antalya, Turkey

64th IIW International Conference, 21-22.7.2011, Chennai

3rd Symposium on Structural Durability in Darmstadt, 26-27.5.2011, Darmstadt

9th International Conference on Multiaxial Fatigue and Fracture, 7-10.6.2010, Parma, Italy

Conference on Light Weight Optimized Welded Structures, March 24-25, 2010, Borlänge, Sweden

International Conference on Fatigue Design, 25-26.11.2009, Senlis, France

International Conference on Crack Paths, 23-25.9.2009, Vincenza, Italy

Official Discussion on Fatigue and Fracture, 17<sup>th</sup> International Ship and Offshore Structures Congress, 16-20.8.2009, Seoul, South Korea

Marquis G., 7<sup>th</sup> International Conference on Biaxial and Multiaxial Fatigue and Fracture, 28.6-1.7.2004, Berlin, Germany

Golden Award of Merit, Welding Society of Finland