HEIDI-LYNN PLOEG, Ph.D. (Mech. Eng.)
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## CAREER OBJECTIVE

To understand the human musculo-skeletal system better, in order to aid the development of biomechanical and safe solutions for the care and treatment of diseased or injured systems.

## CAREER HIGHLIGHTS

- Specialized in pre-clinical evaluation of orthopedic implants, particularly by using mathematical modeling techniques
- 13 years experience in orthopedic implant research and analysis, 10 years at Sulzer Orthopedics Ltd. in Switzerland, 3 years full-time and 6 years part-time at Queen's University in Canada
- Ph.D. in Mechanical Engineering in the field of fatigue test prediction
- 13 research papers published and presented in Europe and North America, 58 co-authored papers
- Awarded Best Paper Award at NAFEMS World Congress 2001 and New Investigator Recognition Award at Combined ORS 2001
- American (4,787,908) and European (A61F-2/42, 01810866.2) patent contributions

## WORK EXPERIENCE

**2003-current** UNIVERSITY OF WISCONSIN - Madison, Madison WI, USA
Department of Mechanical Engineering
Assistant Professor

**1992-2001** CENTERPULSE ORTHOPEDICS ZIMMER Co., Winterthur, Switzerland
Research & Analysis Department, Biomechanics Group - Stress Analysis
Project Manager and Deputy-Coordinator of the Pre-Clinical Stress Analysis Group

*Pre-Clinical Evaluation of Implants.* The objective of the Biomechanics Group is to support the development of orthopedic implants by researching and applying analytical, numerical and experimental methods in order to evaluate implant strength, fixation, and function. Projects are carried out in a team environment, for which my strong project management and communication skills were essential. Communication of project results included written technical reports as well as oral presentations at technical seminars and User Meetings. The quality and significance of my work was confirmed in the research community through presentations at international scientific meetings and through publications in conference proceedings and peer-reviewed journals.

*Group Coordination.* As deputy-coordinator of the Stress Analysis Group, I supported the management of the group's projects, resources, communications and working environment. I have also supervised 13 research students: 2 Ph.D. students on contract, 1 M.Sc. student, 6 "Diplomarbeit" students, and 4 summer students. The M.Sc. project resulted in a European patent application (01810866.2).

*Example Projects:* Fatigue Test Prediction, Physiological Fatigue Test Development for Tibial Base-Plates Virtual Biomechanics System for TKR Development, Biomechanical Considerations for Epi/Metaphyseal Hip Prostheses, Geometry and Elastic Modulus Optimization of a Non-Metallic Femoral Hip Stem, and Bone Modeling and Remodeling.

*Collaborative projects have included:* Institute of Orthopedic Research and Education (Houston, TX, USA), École Polytechnique Fédérale de Lausanne (Switzerland), Queen's University at Kingston (Canada), Swiss Federal Laboratories for Materials (Duebendorf, Switzerland), Sulzer Innotec, Sulzer Markets and Technology Ltd. (Winterthur, Switzerland), University of Bath (UK), Sulzer Orthopedics Inc. (Austin, TX, USA), University of Rostock (Germany), and Université de Technologie de Compiègne (France).

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1989- QUEEN'S UNIVERSITY AT KINGSTON, Kingston, Canada
1991 Department of Mechanical Engineering
Teaching and Research Assistant

As a Professor's Assistant my duties were supervising and conducting undergraduate labs, grading, conducting tutorials, and occasionally lecturing. As a Research Assistant in the Clinical Mechanics Group my projects included: the material testing of metatarsal bone, 3D reconstructions and finite element analysis of bone and orthopedic implants.

## EDUCATION

QUEEN'S UNIVERSITY AT KINGSTON, Kingston, ON, Canada

2000 Ph.D. in Mechanical Engineering
*Fatigue Test Prediction: An Evaluation of Methods Applied to the Standard Fatigue Testing of Orthopaedic Hip Stems.*

1991 M.Sc. in Mechanical Engineering
*An Evaluation of a Joint Replacement for the Great Toe - A Three-Dimensional Finite Element Study.* My work supported the development of this new joint replacement. The implant has European (A61F-2/42) and American (4,787,908) patents.

1988 B.Sc. in Mechanical Engineering, with Honours

## AWARDS

New Investigator Recognition Award (NIRA)

Ploeg H., Soulhat J., Hertig D., O'Keane M., Roberts P., Grigoris P., Finite element analysis of a cemented surface replacement of the proximal femur, poster presentation at 4th Combined Meeting of the Orthopaedic Research Societies of the USA, Canada, Europe, and Japan (CORS), Rhodes, Greece, 2001, pg. 224.

Best Paper Award

Ploeg H., Taylor W., Warner M., Hertig D., Clift S., Finite element analysis and bone remodelling after total hip replacement, oral presentation at NAFEMS World Congress, Lake Como, Italy, 2001. Paper published in *The Evolution of Product Simulation, Proceedings of NAFEMS World Congress 2001*, Vol. 2, pp. 811-822, also published in Benchmark, International Magazine for Engineering Designers & Analysts, July 2001, pp. 13-17.

## PERSONAL

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| Citizenships: | Canadian and Dutch |
| Languages: | English (mother), German (good), French (fair), Dutch (fair) |
| Membership: | International Society of Biomechanics, Canadian Society of Biomechanics |

## PUBLICATIONS

### Theses (2)

1. Ploeg H.L., Fatigue Test Prediction: An Evaluation Of Methods Applied to the Standard Fatigue Testing Of Orthopaedic Hip Stems, Ph.D. Thesis, Queen's University, Kingston, Ontario, Canada January 2000.
2. Ploeg H.L., An evaluation of a joint replacement for the great toe: a three-dimensional finite element study, M.Sc. Thesis, Dept. of Mechanical Engineering, Queen's University, Kingston, Ontario, Canada, October 1991.

### Patents (3)

1. Femurhalsprothese, Inventors: Brian Le Gros, Markus Froehlich, Heidi-Lynn Ploeg, Urs Wyss, Application No. 01810866.2, 24. Oct. 2001.
2. Grosssehengrundgelenk-Prothese, Inventors: Urs Wyss, Gerald A. B. Saunders, David Siu, Theodore D. Cooke, Yuki Yoshioka, J. Timothy Bryant, European Patent, Patent Number: EP 0 289 276 B 1, Date of Patent: 29.01.92.
3. Metatarsal-Phalangeal Replacement Joint, Inventors: Urs Wyss, Gerald A. B. Saunders, David Siu, Theodore D. Cooke, Yuki Yoshioka, J. Timothy Bryant, United States Patent, Patent Number: 4,787,908, Date of Patent: Nov. 29, 1988.
4. Fully Integrated Technology for Complete Pre- and Post-Operative Assessments of Orthopedic Surgery, patent pending.

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## Refereed Journal Articles (6)

1. Burgers T., Mason J., Niebur G., Ploeg H., Properties of trabecular bone in the distal femur, submitted to Journal of Biomechanics, Jan. 2007.
2. Sauer, J.L., Potter, J.J., Weisshaar, C.L., Ploeg, H., Thelen, D.G., Influence of gender and power on pelvic motion during seated cycling, submitted to Medicine & Science in Sports & Exercise, Dec. 2006.
3. Schmitz M.J., Clift S.E., Taylor W.R., Hertig D., Warner M.D., Ploeg H., Bereiter H., Investigating the effect of mechanotransductive signal type on the finite element based prediction of bone remodelling around the Thrust Plate Prosthesis: A patient specific comparison, Proc Inst Mech Eng [H] 218(6):417-424, 2004.
4. Taylor W.R., Ploeg H., Hertig D., Warner M.D., Clift S.E., Bone remodelling of a proximal femur with the Thrust Plate Prosthesis: An in-vitro case, Computer Methods in Biomechanics and Biomedical Engineering 7(3):131-137, 2004.
5. Herren D.B., Ploeg H., Hertig D., Klabunde R., Modeling and finite element analysis of a new revision implant for the elbow, Clinical Orthopaedics and Related Research 420:292-297, March 2004.
6. Taylor W.R., Roland E., Rakotomanana L., Ploeg H., Hertig D., Klabunde R., Warner M.D., Clift S.E., A method for determining orthotropic materials properties for a long bone from CT data using FE modal analysis, Journal of Biomechanics 35:767-773, 2002.
7. Ploeg H.L., Wevers H.W., Wyss U.P., Bürgi M., Fatigue strength testing of hip stems with statistical analysis, Bio-Medical Materials and Engineering 9(4):243-263, 1999.
8. Frei S., Ploeg H., Reinschmidt C., Heuberger P. Fracturas de implantes de tibia - Consecuencias para las pruebas de los implantes (Tibial implant fractures – Consequences for implant testing), Biomecanica VII 13:58-64, 1999.
9. Ploeg H., Wevers H.W., Wyss U.P., and Bürgi M., Hip stem fatigue test prediction with validation, Fatigue and Fracture of Engineering Materials and Structures, in progress.

## Conference Presentations, Oral (25)

1. Freytag M., Ploeg H., Schmidt J., Shapiro V., Tsukanov I., Meshfree Analysis from Biomedical Images: Construction of Approximate Distance Fields, Computational Bioengineering Minisymposium at the 7th World Congress on Computational Mechanics, Los Angeles, CA, 2006.
2. Henderson A., Schmidt J., Ploeg H., Deluzio K., Dunbar M., Finite element & in-vitro testing of tibial stem length in revision total knee arthroplasty, 14th Biennial Conference For The Canadian Society For Biomechanics (CSB), Waterloo, ON, Canada, 2006.
3. Schmidt J., Henderson A., Ploeg H., Deluzio K., Dunbar M., Primary fixation in a revision total knee arthroplasty may not imply long term fixation: the effect of stem length, 16th Annual Meeting of the European Orthopaedic Research Society, Bologna, Italy, 2006.
4. Schmidt J., Henderson A., Ploeg H., Deluzio K., Dunbar M., Development of finite element models to critically evaluate stem selection for a revision total knee arthroplasty, Fifth World Congress of Biomechanics, Munich, Germany, 2006.
5. Kersh M., Ploeg H., Contact area in dome-shaped and conforming patellar implants, Fifth World Congress of Biomechanics, Munich, Germany, 2006.
6. Biegler K., Schmidt J., Ploeg H., Deluzio K., Dunbar M., A parametric analysis study on the number of materials required for a convergence of finite element results for a tibial bone model, 14th Annual Symposium on Computational Methods in Orthopaedic Biomechanics, Chicago IL, USA, 2006.
7. Henderson A., Schmidt J., Ploeg H., Deluzio K., Dunbar M., Finite element & in-vitro testing of tibial stem length in revision total knee arthroplasty, 14th Annual Symposium on Computational Methods in Orthopaedic Biomechanics, Chicago IL, USA, 2006.
8. Murphy K.C., Biegler K., Ploeg H., The design and finite element analysis of biomimetic bone scaffolds, 14th Annual Symposium on Computational Methods in Orthopaedic Biomechanics, Chicago IL, USA, 2006.
9. Schmidt J., Henderson A., Ploeg H., Deluzio K., Dunbar M., Finite element analysis of stem dimensions in a revision total knee arthroplasty using visible human computed tomography data, 14th Annual Symposium on Computational Methods in Orthopaedic Biomechanics, Chicago IL, USA, 2006.
10. Freytag, M., Ploeg H., Shapiro, V., Tsukanov, I., Meshfree stress modeling from biomedical images, International Symposium on Computer Simulation in Biomechanics, Cleveland, OH, USA, 2005.
11. Siggelkow E., Hertig D., Widmer K.-H., Ploeg H., Construction and validation of a finite element model of a human pelvis, 7th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Madrid, Spain, 2004.
12. Le Gros B., Wyss U., Ploeg H., Frohlich M., An analytical investigation of potential design changes for a reduction in hip stem elastic modulus, oral presentation, 6th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Rome, Italy, 2001.

13. Schmitz M.J., Taylor W.R., Warner M.D., Hertig D., Ploeg H. and Clift S.E., Effect of changes in the relative rates of bone deposition and resorption on a finite element based simulation of bone remodelling around the Thrust Plate Prosthesis, 6th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Rome, Italy, 2001.
14. Le Gros B., Wyss U, Ploeg H., Froehlich M., O848 Analysis of femoral hip prosthetic geometry and material interdependence, oral presentation, 18th International Society of Biomechanics (ISB) Congress, Zurich, Switzerland, 2001, pg. 381.
15. Ploeg H., Taylor W., Warner M., Hertig D., Clift S., Finite element analysis and bone remodelling after total hip replacement, oral presentation at NAFEMS World Congress, Lake Como, Italy, 2001. Paper published in The Evolution of Product Simulation, Proceedings of NAFEMS World Congress 2001, Vol. 2, pp. 811-822. Awarded "Best Paper Award" and published in Benchmark, International Magazine for Engineering Designers & Analysts, July 2001, pp. 13-17.
16. Ploeg H., Taylor W., Hertig D., Warner M., Clift S., Bereiter H., FEA von Knochen mit Implantaten um Knochenumbau vorherzusagen, oral presentation at Abaqus Anwendertreffen, Winterthur, Switzerland, 2000. Paper published in the proceedings.
17. Taylor W.R., Roland E., Klabunde R., Ploeg H., Clift S.E., Validation of an FE model of an implanted Thrust Plate Prosthesis using modal analysis, oral presentation at 4th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Lisbon, Portugal, 1999. Paper published in Computer Methods in Biomechanics and Biomedical Engineering-3, eds. Middleton J., Jones M.L., Shrive N.G., Pande G.N., Gordon and Breach Publishing Group, London, UK, 2001, pp. 39-44.
18. Heinlein B., Frei S., Ploeg H., Bürgi M., The physiological tibia test, oral presentation at 17th International Society of Biomechanics (ISB) Congress, Calgary, Canada, 1999.
19. Heinlein B., Frei S., Ploeg H., Der „physiologische Tibiatest" - ein neues Konzept in der Implantatprüfung, oral presentation at Deutsche Gesellschaft für Biomechanik, Ulm, Germany, 1999.
20. Terrier A., Rakotomana L., H. Ploeg, P.-F. Leyvraz, Comparison of a metal backed and a full polyethylene tibial component after TKR: evaluation of the stresses and relative micro-motions distribution at the interface, oral presentation at International Conference on Knee Replacement (ImechEB), London, UK, 1999.
21. Ploeg H.L., Wevers H.W., Wyss U.P., and Bürgi M., Finite element analysis and fatigue test prediction applied to the standard fatigue testing of hip stems, oral presentation at 3rd International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Barcelona, Spain, 1997. Paper in Computer Methods in Biomechanics and Biomedical Engineering-2, eds. Middleton J., Pandi G., Jones M., Gordon and Breach Publishing Group, London, UK, 1998, pp. 139-146.
22. Ploeg H.L., Wyss U.P., Smith C.M., Dujovne A.R., A three dimensional finite element analysis in the development of a total joint replacement for the great toe, oral presentation at 15th Annual Meeting of the American Society of Biomechanics (ASB), Tempe, USA, 1991.
23. Smith C.M., Wyss U.P., Pichora D.R., Ploeg H.L., Glenoid implant technology - Part I: Development of a three-dimensional finite element model, Oral presentation at 15th Annual Meeting of the American Society of Biomechanics (ASB), Tempe, USA, 1991.
24. Ploeg H.L., Wyss U.P., Smith C.M., 3D finite element analysis in the development of joint replacement for the great toe, oral presentation at 7th Biennial Conference of the Canadian Medical and Biological Engineering Society Conference (CMBEC), Banff, Canada, 1991.
25. Smith C.M., Wyss U.P., Pichora D.R., Ploeg H.L., Advances in glenoid implant technology - A finite element study, oral presentation at 7th Biennial Conference of the Canadian Medical and Biological Engineering Society Conference (CMBEC), Banff, Canada, 1991.

## Conference Presentations, Poster (41)

1. Kersh, M.E., Ploeg, H., Burgkart, R., Siggelkow, E., Münchinger, M., Creating a physiological knee model: experimental methods and validation concept, International Society of Biomechanics Conference, Taipei, Taiwan, 2007.
2. Schmitz, A.M., Ploeg, E.L., Beshai, L.M., Bryant, J.T., Ploeg, H., Stiffness analyses for the design development of a prosthetic foot, 12th World Congress of the International Society for Prosthetics and Orthotics, Vancouver, BC, 2007.
3. Potter, J.J. Sauer, J.L., Weisshaar, C., Ploeg, H., Thelen, D.G., Biomedical Engineering Society Annual Meeting, Combined analysis of pelvic motion and saddle pressure distribution during cycling, Chicago, IL, USA, 2006.
4. García S, Ploeg H, Smith E, Zetos loading system: an evaluation and recalibration study, American Society for Bone and Mineral Research (ASBMR) 28th Annual Meeting, Philadelphia, PA, 2006.
5. Freytag M., Ploeg H., Schmidt J., Shapiro V., Tsukanov I., Meshfree analysis from biomedical images: construction of approximate distance fields, 7th World Congress on Computational Mechanics, Los Angeles, California, 2006.

6. Schmidt J., Henderson A., Ploeg H., Deluzio K., Dunbar M., Primary fixation in a revision total knee arthroplasty may not imply long term fixation: the effect of stem length, 16th Annual Meeting of the European Orthopaedic Research Society, Bologna, Italy, 2006.
7. Schmidt J., Henderson A., Ploeg H., Deluzio K., Dunbar M., Development of finite element models to critically evaluate stem selection for a revision total knee arthroplasty, Fifth World Congress of Biomechanics, Munich, Germany, 2006.
8. Kersh M., Ploeg H., Contact area in dome-shaped and conforming patellar implants, Fifth World Congress of Biomechanics, Munich, Germany, 2006.
9. Biegler K., Schmidt J., Ploeg H., Deluzio K., Dunbar M., A parametric analysis study on the number of materials required for a convergence of finite element results for a tibial bone model, 14th Annual Symposium on Computational Methods in Orthopaedic Biomechanics, Chicago IL, USA, 2006.
10. Henderson A., Schmidt J., Ploeg H., Deluzio K., Dunbar M., Finite element & in-vitro testing of tibial stem length in revision total knee arthroplasty, 14th Annual Symposium on Computational Methods in Orthopaedic Biomechanics, Chicago IL, USA, 2006.
11. Murphy K.C., Biegler K., Ploeg H., The design and finite element analysis of biomimetic bone scaffolds, 14th Annual Symposium on Computational Methods in Orthopaedic Biomechanics, Chicago IL, USA, 2006.
12. Schmidt J., Henderson A., Ploeg H., Deluzio K., Dunbar M., Finite element analysis of stem dimensions in a revision total knee arthroplasty using visible human computed tomography data, 14th Annual Symposium on Computational Methods in Orthopaedic Biomechanics, Chicago IL, USA, 2006.
13. Byrne N., Ploeg H., Deffenbaugh D., Finite element analysis of a total ankle arthroplasty over one stance phase. International Society of Biomechanics Conference, Cleveland OH, USA, 2005.
14. García S., Schmidt J., Ploeg H., A Validation Study: Using CT Scans to Calculate Volume, Weight, and Density. International Society of Biomechanics Conference, Cleveland OH, USA, 2005.
15. Kersh M., Ploeg H., Deformation Patterns form a Pre-clinical Patellar Component Test. International Society of Biomechanics Conference, Cleveland OH, USA, 2005.
16. Ploeg H., Byrne N., Garcia S., Kersh M., Weghe Van de A., What factors affect the accuracy of solid models made from ct data? International Society of Biomechanics Conference, Cleveland OH, USA, 2005.
17. Schmidt J., Engh J., Viceconti M., Ploeg H., What is the accuracy of surface models created from visible human male computed tomography data? International Society of Biomechanics Conference, Cleveland OH, USA, 2005.
18. García S., Schmidt J., Ploeg H., A Validation Study: Using CT Scans to Calculate Volume, Weight, and Density. International Symposium on Computer Simulation in Biomechanics, Cleveland OH, USA, 2005.
19. Schmidt J., Engh J., Viceconti M., Ploeg H., What is the accuracy of surface models created from visible human male computed tomography data? International Symposium on Computer Simulation in Biomechanics, Cleveland OH, USA, 2005.
20. Kersh M., Ploeg H., How does normal patello-femoral contact area change before and after deep knee flexion? American Society of Mechanical Engineering – Summer Bioengineering Conference, Vail CO, USA, 2005. Awarded 3rd place in Undergraduate poster competition.
21. Garcia S., Ploeg H., Smith E. Repeatability Study of the Zetos Ex-vivo Bone Loading System Using Metallic and Polymeric Specimens. American Society of Mechanical Engineering – Summer Bioengineering Conference, Vail CO, USA, 2005.
22. Schmidt J., Henderson A., Ploeg H., Deluzio K., Dunbar M., Development of Surgical Guidelines for Tibial Stem Components in a Revision Total Knee Arthroplasty. American Society of Mechanical Engineering – Summer Bioengineering Conference, Vail CO, USA, 2005.
23. Kersh M., Ploeg H., Development of pre-clinical patellar component test for total knee arthroplasty, Proceedings of IMECE2004: 2004 ASME International Mechanical Engineering Congress and R&D Expo, Anaheim, CA, 2004.
24. Ploeg H., Smith E.L., Gerson A., García S., Broeckmann E., Jones D.B., Repeatability of the Ex-vivo Bioreactor Bone Organ Culture Chamber and Loading System, American Society for Bone and Mineral Research (ASBMR) 26th Annual Meeting, Seattle, WA, 2004.
25. Smith E.L., Gerson A., Ploeg H., Jones D.B., Pressure Modulation During Loading of a Trabecular Bone Core in an Ex Vivo Model, American Society for Bone and Mineral Research (ASBMR) 26th Annual Meeting, Seattle, WA, 2004.
26. Ploeg H., Ploeg E., Byrne N., García S., Kersh M., Nair D., How accurate are solids models made from CT scan data?, Thirteenth Biennial Conference, Canadian Society for Biomechanics (CSB), Halifax, NS, 2004.
27. Le Gros B., Wyss U., Ploeg H., Froehlich M., Numerical analysis of a polymeric metaphyseal THA geometry for patients with hypersensitivity to metallic biomaterials, poster presentation at 48th Annual Orthopaedic Research Society (ORS), Dallas, TX, 2002, Paper No. 981.
28. Schmitz M. J., Clift S. E., Taylor W. R., Hertig D., Warner M. D., Ploeg H. L., Bereiter H., A comparison of deviatoric, dilatational and energy based signals in bone remodelling predictions applied to the Thrust Plate Prosthesis, poster presentation, 12th Annual European Research Society (EORS), Lausanne, Switzerland, 2002.

29. Schmitz M. J., Clift S. E., Taylor W. R., Hertig D., Warner M. D., Ploeg H. L., Bereiter H., Prediction of bone remodelling around the Thrust Plate Prosthesis: A patient specific finite-element study of the effect of remodelling signal, poster presentation, International Conference Engineers & Surgeons, Joined at the Hip (IMechE Medical Engineering Division), 2002.
30. Ploeg H., Soulhat J., Hertig D., O'Keane M., Roberts P., Grigoris P., Finite element analysis of a cemented hip resurfacing, oral presentation at British Orthopaedic Research Society Meeting (BORS), Southhampton, UK, 2001.
31. Herren D., Ploeg H., Hertig D., Klabunde R., A new total joint replacement for elbow arthroplasty revision, oral presentation at 4th Combined Meeting of the Orthopaedic Research Societies of the USA, Canada, Europe, and Japan (CORS), Rhodes, Greece, 2001, pg. 173.
32. Ploeg H., Soulhat J., Hertig D., O'Keane M., Roberts P., Grigoris P., Finite element analysis of a cemented surface replacement of the proximal femur, poster presentation at 4th Combined Meeting of the Orthopaedic Research Societies of the USA, Canada, Europe, and Japan (CORS), Rhodes, Greece, 2001, pg. 224. Awarded New Investigator Recognition Award (NIRA).
33. Taylor W.R., Warner M., Clift S.E., Ploeg H., Hertig D., Klabunde R., Bereiter H., Comparison between clinical findings and FE based bone remodelling predictions for the Thrust Plate Prosthesis, poster presentation at 4th Combined Meeting of the Orthopaedic Research Societies of the USA, Canada, Europe, and Japan (CORS), Rhodes, Greece, 2001, pg. 275.
34. Frei S., Hertig D., Ploeg H., Heuberger P., Analysis and testing of the Dynamic Hip Screw plate and hip screw, 66. Jahrestagung 2002 der deutschen Gesellschaft für Unfallchirurgie, Berlin, Germany, 2001.
35. Le Gros B., Wyss U., Ploeg H., Fröhlich M., Considerations for the design of a low elastic modulus stem based on a numerical analysis of interface micromotion of a non-cemented stem, poster presentation, 25th European Society of Biomaterials (ESB), London, UK, 2001.
36. Clift S.E., Taylor W.R., Hertig D., Warner M.D., Ploeg H., P317 FE based prediction of bone remodelling around the Thrust Plate Prosthesis, poster presentation, 18th International Society of Biomechanics (ISB) Congress, Zurich, Switzerland, 2001, pg. 150.
37. Soulhat J., Dan D., Beaugonin M., Ploeg H, Reinschmidt C., Krevolin J., P319 Numerical simulations of mechanical tests for knee implants, poster presentation, 18th International Society of Biomechanics (ISB) Congress, Zurich, Switzerland, 2001, pg. 151.
38. Siggelkow E., Hertig D., Widmer H.K., Ploeg H., P739 Construction and validation of a finite element model of a human pelvis, poster presentation at 18th International Society of Biomechanics (ISB) Congress, Zurich, Switzerland, 2001, pg. 333.
39. Kuster M.S., Ploeg H., Grob K.R., Forster T.N., Optimal screw placement for plate osteosynthesis, poster presentation at European Society of Sports Traumatology, Knee Surgery and Arthroscopy (ESSKA), London, UK, 2000.
40. Ploeg H.L., Wevers H.W., Wyss U.P., and Bürgi M., Life prediction techniques applied to the standard fatigue testing of hip stems, poster presentation at 3rd International Conference on Engineering Structural Integrity Assessment, Cambridge, UK, 1996. Paper published in Life Assessment and Life Extension of Engineering Plant, Structures and Components, eds. Edwards J.H., Flewitt P.E.J., Gasper B.C., McLarty K.A., Stanley P., and Tomkins B., Chameleon Press Ltd., London, 1996, 617-626.
41. Ploeg H.L., Cooke T.D.V., Smith C.M., Wyss U.P., Three-dimensional finite element modelling in the design of a metatarsal-phalangeal joint replacement, poster presentation at 25th Annual Meeting of the Canadian Orthopaedic Research Society (CORS), Calgary, Canada, 1991. Abstract published in The Journal of Bone and Joint Surgery.