

March 2008

CURRICULUM VITAE

ANDREW H. HANSEN

PERSONAL INFORMATION

Full Name: Andrew Howard Hansen, MS, PhD

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EDUCATION

- 1995 University of Iowa, Iowa City, Iowa,
Bachelor of Science in Biomedical Engineering,
With Honors and Highest Distinction
- 1998 Northwestern University, Evanston, Illinois
Master of Science in Biomedical Engineering,
Thesis title: Influence of Prosthetic Foot Mechanics on Alignment of
Trans-tibial Prostheses
- 2002 Northwestern University, Evanston, Illinois
Doctorate of Philosophy in Biomedical Engineering,
Dissertation title: Roll-over Characteristics of Human Walking With
Applications for Artificial Limbs

POSTDOCTORAL RESEARCH TRAINING

04/2002-12/2003 Postdoctoral Fellow, Northwestern University Feinberg School
of Medicine, Department of Physical Medicine and
Rehabilitation, Chicago, IL

FACULTY AND PROFESSIONAL APPOINTMENTS

- 12/2003 – present Research Assistant Professor, Northwestern University
Feinberg School of Medicine, Department of Physical
Medicine and Rehabilitation, Chicago, IL
- 12/2006 – present Research Health Scientist, Jesse Brown VA Medical Center,
Chicago, IL
- 03/2007 – present Affiliated Faculty, Northwestern University
McCormick School of Engineering and Applied Science
Department of Biomedical Engineering

COMMITTEE SERVICE

- 2003-2005 Research and Development Committee,
Jesse Brown VA Medical Center, Chicago, IL.
- 2005-2007 Human Subjects Research Subcommittee,
Jesse Brown VA Medical Center, Chicago, IL
- 2007-present Institutional Review Board, Panel D
Northwestern University, Chicago, IL

AWARDS, HONORS, DISTINCTIONS

- 1991 Freshman Chemistry Award, *University of Iowa*
- 1993-1995 Alexander Scholarship, *University of Iowa*
Dimond Scholarship, *University of Iowa*
Poston Scholarship, *University of Iowa*
Stebler Scholarship, *University of Iowa*
- 1996-1997 Walter P. Murphy Fellowship, *Northwestern University*
- 1997-2000 Graduate Research Assistant Tuition Scholarship,
Northwestern University
- 1998 Invited speaker, *Gait Analysis Symposium Honoring H. Kerr Graham at Children's Memorial Hospital, Foot Shape and Rehabilitation. Chicago, Illinois, September 14.*
- 2000 Invited speaker, *Grand Rounds Series, The Rehabilitation Institute of Chicago and Northwestern University Medical School Department of Rehabilitation Medicine, presented by Childress and Hansen, Roll-over Shapes of Human & Artificial Feet: Shape as a Key to Function or Dysfunction. Chicago, Illinois, March 1.*
- 2000 Invited Speaker, *Midwest Chapter of the American Academy of Orthotists and Prosthetists Summer Scientific Seminar, Roll-over Shapes of Foot/Ankle Systems: Prosthetics and Orthotics Applications. Michigan City, Indiana, June 9.*
- 2001 Invited Speaker, *Northwestern University Biomedical Engineering Department Seminar, The Role of the Foot/Ankle System in Human Walking With Applications for Artificial Limbs. Evanston, Illinois, November 28.*
- 2000-2001 Pre-doctoral Associated Health Rehabilitation Research Fellowship,
VA Chicago Health Care System, Lakeside Division
- 2001-2002 Graham Pre-doctoral Fellowship, *Northwestern University*
- 2002 Invited Speaker, *Sensory Motor Performance Program, Rehabilitation Institute of Chicago, Roll-over Characteristics of Human Walking With Applications for Artificial Limbs. Chicago, Illinois, June 6.*
- 2004 Best Paper Prize, *11th World Congress of the International Society for Prosthetics and Orthotics, Hong Kong, August 6th.*
- 2004 Invited speaker, *Second Regional Conference Meeting of Experts: Reaching People's Needs by Building Partnerships in Disability, Technology and Integrated Rehabilitation, The Shape&Roll Prosthetic Foot. Mexico City, Mexico, October 13-15.*
- 2005 Invited participant, *American Academy of Orthotists and Prosthetists State of the Science Conference on Prosthetic Foot Ankle Mechanisms, Dallas, Texas, April 14th-16th.*
- 2005 Invited participant, *Mobility India's and the Center for International*

- Rehabilitation's Workshop on Exchange of Information on Rehabilitation Technology and Disability Rights, Bangalore, India, April 25th-27th.*
- 2006 Howard R. Thranhardt Lecture Award, *Annual Meeting and Scientific Symposium of the American Academy of Orthotists and Prosthetists, Chicago, Illinois, March 1-4.*
- 2006 Invited speaker, *Center for Applied Biomechanics and Rehabilitation Research, National Rehabilitation Hospital, Physiologic Roll-over Shapes: Implications for Design and Evaluation of Lower Limb Protheses. Washington, D.C., March 29.*
- 2006 Invited speaker, *The Ohio State University Mechanical Engineering Seminar Series, Roll-over Shape: A Tool for Design, Evaluation, and Alignment of Prosthetic Ankle-Foot Mechanisms. Columbus, Ohio, October 20.*
- 2006 Invited participant, *The National Academies Keck Futures Initiative on Smart Prosthetics – Exploring Assistive Devices for the Body and Mind, Irvine, California, November 9-11.*
- 2006 Invited speaker, *Jesse Brown VA Medical Center, Roll-over Shape: A Tool for Design, Evaluation, and Alignment of Prosthetic Ankle-Foot Mechanisms. Chicago, Illinois, December 1.*
- 2007 Invited participant, *American Academy of Orthotists and Prosthetists State of the Science Conference on Biomechanics of Ambulation after Partial Foot Amputation, Chicago, Illinois, March 3-4.*
- 2007 Invited participant, *Lower Limb Amputee Needs Assessment Workshop, Organized by the Advanced Platforms Technology Center and the Center for Limb Loss Prevention and Prosthetic Engineering. Seattle, Washington, October 30-31.*

PROFESSIONAL SOCIETY MEMBERSHIPS

- 1993-1995 Tau Beta Pi Engineering Honor Society, *University of Iowa*
 1993-1995 Alpha Eta Mu Beta Engineering Honor Society, *University of Iowa*
 1993-1996 IEEE Engineering in Medicine and Biology Society
 1998-2001 American Society of Mechanical Engineers

PROFESSIONAL and SCIENTIFIC SERVICE

- Reviewer - Journal of Rehabilitation Research and Development
Reviewer - Prosthetics and Orthotics International
Reviewer - IEEE Transactions on Neural Systems and Rehabilitation Engineering
Reviewer - Journal of Biomechanics
Reviewer - IEEE 9th International Conference on Rehabilitation Robotics
Reviewer - National Institute on Disability and Rehabilitation Research
Reviewer - National Science Foundation
Reviewer - Department of Veterans Affairs
Reviewer - IEEE Transactions on Robotics
Reviewer - IEEE Transactions on Biomedical Engineering
Reviewer - Health Research Board, Dept. of Foreign Affairs, Irish Government
Reviewer - Paralyzed Veterans of America's Research Foundation
Reviewer – Journal of Applied Biomechanics

TEACHING

Teaching Assistant - Computers in Engineering, University of Iowa College of Engineering, 1995.

Course Instructor - Instructional Course on Prosthetic Feet. 10th World Congress of the International Society for Prosthetics and Orthotics, Glasgow, Scotland, July 2, 2001.

Course Instructor - American Association for Orthotists and Prosthetists (AAOP) Advanced Training Course: Overview of Gait Analysis for Prosthetists and Orthotists, Rehabilitation Institute of Chicago, Chicago, IL, USA, September 19-21, 2002.

Mentor – Michael Wasserman B.S., Honors Student, Northwestern University, Department of Biomedical Engineering, 2004-2006.

Graduate Student's Committee Member – Pinata Hungspreugs, M.S., PhD Candidate, Northwestern University, Department of Biomedical Engineering, 2005-present.

Graduate Student's Committee Member – Sara Koehler, M.S., PhD Candidate, Northwestern University, Department of Biomedical Engineering, 2006-present.

Graduate Student's Committee Member – Ryan Williams, M.S., Northwestern University, Department of Biomedical Engineering, 2006-2007.

Invited Lecturer – American Academy of Orthotists and Prosthetists (AAOP) One Day Seminar on Prosthetic Foot/Ankle Mechanisms, Rosemont, Illinois, October 23rd, 2006.

Invited Lecturer – Certificate Program on Prosthetic Ankle-Foot Mechanisms, Annual Meeting and Scientific Symposium of the American Academy of Orthotists and Prosthetists, San Francisco, California, March 24th, 2007.

Instructor – BME 366 - Biomechanics of Movement, Northwestern University, Department of Biomedical Engineering, Spring quarter 2007 – present.

Advisor – Elizabeth Klodd, Masters Student, Department of Biomedical Engineering, 2007 – present.

Advisor – Charles Wang, Masters Student, Department of Biomedical Engineering, 2008 – present.

RESEARCH GRANTS/CONTRACTS

Effects of Prosthetic Foot Rocker Radius on Gait of Prosthesis Users
Veterans Administration Rehabilitation Research and Development
Merit Review Grant

October 1, 2006 – September 30, 2009

Principal Investigators: Andrew H. Hansen, PhD and Steven A. Gard, PhD

Total direct cost: \$560,342

Responses of the Ankle to Changes in Shoe Rocker Radius
National Institutes of Health, Small Research Grant (R03)

September 10, 2007 – August 31, 2009

Principal Investigator: Andrew H. Hansen, PhD

Total direct cost: \$100,000 (Total cost: \$126,000)

(Subcontract) Shape&Roll Talon

Marie Curie International Re-Integration Grant

University of Strathclyde, Glasgow, UK

July 1, 2007 – June 30, 2010

Principal Investigator: Andrew H. Hansen, PhD

Total direct cost: \$37,045 (Total cost: \$39,183)

RESEARCH GRANTS/CONTRACTS PENDING

Development of a Prosthetic Ankle-Foot System with Increased Stability for Standing

National Science Foundation, Research to Aid Persons with Disabilities (RAPD)

June 1, 2008 – May 31, 2010

Principal Investigator: Andrew H. Hansen, PhD

Total costs (direct and indirect): \$194,879

SCHOLARLY BIBLIOGRAPHY

Original, peer-reviewed research articles:

1. **Hansen, A.H.**, Childress, D.S., Knox, E.H. (2000) Prosthetic Foot Roll-over Shapes with Implications for Alignment of Trans-tibial Prostheses. *Prosthetics and Orthotics International*, Vol. 24, No. 3, 205-215.
2. **Hansen, A.**, Childress, D., Meier, M. (2002) A Simple Method for Determination of Gait Events. *Journal of Biomechanics*, Vol. 35, No. 1, 135-138.
3. **Hansen, A.H.**, Meier, M.R., Sam, M., Childress, D.S., Edwards, M.L. (2003) Alignment of Trans-tibial Prostheses Based on Roll-over Shape. *Prosthetics and Orthotics International*, Vol. 27, No. 2, 89-99.
4. **Hansen, A.**, Childress, D., Miff, S. (2004) Roll-over Characteristics of Human Walking on Inclined Surfaces. *Human Movement Science*, Vol. 23, No. 6, 807-821.
5. **Hansen, A.**, Childress, D., Miff, S., Gard, S., Mesplay, K. (2004) The Human Ankle During Walking: Implications for Design of Biomimetic Ankle Prostheses and Orthoses. *Journal of Biomechanics*, Vol. 37, No. 10, 1467-1474.
6. **Hansen, A.**, Childress, D., Knox, E. (2004) Roll-over Shapes of Human Locomotor Systems: Effects of Walking Speed. *Clinical Biomechanics*, Vol. 19, No. 4, 407-414.
7. **Hansen, A.**, Sam, M., Childress, D. (2004) The Effective Foot Length Ratio (EFLR) A Potential Tool for Characterization and Evaluation of Prosthetic Feet. *Journal of Prosthetics and Orthotics*, Vol. 16, No. 2, 41-45.
8. **Hansen, A.**, Childress, D. (2004) Effects of Shoe Heel Height on Biologic Roll-over Characteristics During Walking. *Journal of Rehabilitation Research and Development*, Vol. 41, No. 4, 547-554.
9. Sam, M., **Hansen, A.**, Childress, D. (2004) Characterization of Prosthetic Feet Used in Low-Income Countries. *Prosthetics and Orthotics International*, Vol. 28, 132-140.
10. **Hansen, A.**, Childress, D. (2005) Effects of Adding Weight to the Torso on Roll-over Characteristics of Walking. *Journal of Rehabilitation Research and Development*, Vol. 42, No. 3, 381-390.
11. Miff, S., Childress, D., Gard, S., Meier, M., **Hansen, A.** (2005) Temporal Symmetries During Gait Initiation and Termination in Non-Disabled Ambulators and in People with Unilateral Transtibial Limb Loss. *Journal of Rehabilitation Research and Development*, Vol. 42, No. 2, 175-182.

12. **Hansen, A.**, Meier, M., Sessoms, P., Childress, D. (2006) The Effects of Prosthetic Foot Roll-over Shape Arc Length on the Gait of Trans-tibial Prosthesis Users. *Prosthetics and Orthotics International*, Vol. 30, No. 3, 286-299.
13. Fatone S. and **Hansen AH**. (2007) A Model to Predict the Effect of Ankle Joint Misalignment on Calf Band Movement in Ankle-Foot Orthoses. *Prosthetics and Orthotics International*, Vol. 31, No. 1, 76-87.
14. Fatone S. and **Hansen AH**. (2007) Effect of an Ankle Foot Orthosis on Roll-over Shape in Adults with Hemiplegia. *Journal of Rehabilitation Research & Development*, Vol. 44, No. 1, 11-20.
15. Miff SC, **Hansen AH**, Childress DS, Gard SA, Meier MR. (2008) Roll-over Shapes of the Able-Bodied Knee-Ankle-Foot System during Gait Initiation, Steady-State Walking, and Gait Termination. *Gait and Posture*, Vol. 27, 316-322.
16. Dillon M, **Hansen AH**, Fatone S. Influence of Marker Models on Ankle Kinematics in Persons with Partial Foot Amputation: An Investigation Using a Mechanical Model. *Journal of Rehabilitation Research and Development*, in press.
17. Srinivasan S, Westervelt ER, **Hansen AH**. A Low-Dimensional Sagittal Plane Forward-Dynamic Model for Asymmetric Gait and its Application to Study the Gait of Transtibial Prosthesis Users. *Journal of Biomechanical Engineering*, submitted.
18. **Hansen AH**, Meier MR, Steer S, Sam M, Dussud S, Wu Y, Childress DS. Technique for Manufacturing Low-Cost Prosthetic Foot Shells. *Journal of Rehabilitation Research and Development*, submitted.
19. **Hansen AH**. Effects of Alignment on the Roll-over Shapes of Prosthetic Feet. *Prosthetics and Orthotics International*, submitted.
20. **Hansen AH**, Childress DS. Effects of Shoe Heel Height on the Roll-over Shapes of Prosthetic Ankle-Foot Systems: Implications for Heel-Height Adjustable Components. *Journal of Prosthetics and Orthotics*, submitted.
21. Williams RJ, **Hansen AH**, Gard SA. Prosthetic Ankle-Foot Mechanism Capable of Automatic Adaptation to the Walking Surface. *Journal of Biomechanical Engineering*, submitted.

Books:

1. Meier MR, Steer SA, **Hansen AH**, Sam M, Childress DS (2006) *Shape&Roll Prosthetic Foot Manual 1—Fabrication of a Lever Compression Mold*. SpectraGraphics Printing Inc., La Crosse, WI, ISBN: 0-9785898-0-7.
2. Meier MR, Steer SA, **Hansen AH**, Sam M, Childress DS (2006) *Shape&Roll Prosthetic Foot Manual 2—Fabrication of the Core*. SpectraGraphics Printing Inc., La Crosse, WI, ISBN: 0-9785898-1-5.

Book Chapters:

1. **Hansen A.**, Gard S., Childress D. (2000) The Determination of Foot/Ankle Roll-over Shape: Clinical and Research Applications. In: *Pediatric Gait: A New Millennium in Clinical Care and Motion Analysis Technology*. Edited by Harris, G. and Smith, P., Piscataway, NJ: Institute of Electrical and Electronics Engineers, Inc.
2. **Hansen AH**, Gard SA, Childress DS (2007) Quasi-stiffness of the Ankle During Able-Bodied Walking at Different Speeds: Implications for Design of Prostheses. In: *Foot and Ankle Motion Analysis: Clinical Treatment and*

Technology. Edited by Harris GF, Smith PA, and Marks RM., Boca Raton, FL: CRC Press.

Internal Technical Reports:

1. **Hansen, A.H.** (1998). Direct Ultrasound Ranging System as an Alignment Tool for Trans-tibial Prostheses: A Case Study. Internal Technical Report, #28, Northwestern University Rehabilitation Engineering Research Program and Prosthetics Research Laboratory.
2. Sam, M., **Hansen, A. H.**, Childress, D.S. (2000) Biomechanical Characterization of Prosthetic Feet: Results of the EB-1 Foot. Internal Technical Report, #29, Northwestern University Rehabilitation Engineering Research Program and Prosthetics Research Laboratory.
3. Sam, M., **Hansen, A. H.**, Childress, D.S. (2000) Biomechanical Characterization of Prosthetic Feet: Results of the Wooden Keel FUNTER Foot. Internal Technical Report, #30, Northwestern University Rehabilitation Engineering Research Program and Prosthetics Research Laboratory.
4. Sam, M., **Hansen, A. H.**, Childress, D.S. (2000) Biomechanical Characterization of Prosthetic Feet: Results of the Polypropylene Keel FUNTER Foot. Internal Technical Report, #31, Northwestern University Rehabilitation Engineering Research Program and Prosthetics Research Laboratory.
5. Sam, M., **Hansen, A. H.**, Childress, D.S. (2000) Biomechanical Characterization of Prosthetic Feet: Results of the ICRC Leaf Spring Prosthetic Foot. Internal Technical Report, #32, Northwestern University Rehabilitation Engineering Research Program and Prosthetics Research Laboratory.
6. Sam, M., **Hansen, A. H.**, Childress, D.S. (2000) Biomechanical Characterization of Prosthetic Feet: Results of the ICRC Mozambique Foot. Internal Technical Report, #33, Northwestern University Rehabilitation Engineering Research Program and Prosthetics Research Laboratory.
7. Sam, M., **Hansen, A. H.**, Childress, D.S. (2000) Biomechanical Characterization of Prosthetic Feet: Results of the CADEG Foot. Internal Technical Report, #34, Northwestern University Rehabilitation Engineering Research Program and Prosthetics Research Laboratory.
8. Sam, M., **Hansen, A. H.**, Childress, D.S. (2000) Biomechanical Characterization of Prosthetic Feet: Results of the Snelson Foot. Internal Technical Report, #35, Northwestern University Rehabilitation Engineering Research Program and Prosthetics Research Laboratory.
9. Sam, M., **Hansen, A. H.**, Childress, D.S. (2000) Biomechanical Characterization of Prosthetic Feet: Results of the Jaipur Foot. Internal Technical Report, #36, Northwestern University Rehabilitation Engineering Research Program and Prosthetics Research Laboratory.
10. Sam, M., **Hansen, A. H.**, Childress, D.S. (2001) Biomechanical Characterization of Prosthetic Feet: Results of the USMC E2 Foot. Internal Technical Report, #37, Northwestern University Rehabilitation Engineering Research Program and Prosthetics Research Laboratory.
11. Sam, M., **Hansen, A. H.**, Childress, D.S. (2001) Biomechanical Characterization of Prosthetic Feet: Results of the ICRC Ethiopia Prosthetic Foot. Internal Technical Report, #40, Northwestern University Rehabilitation Engineering Research Program and Prosthetics Research Laboratory.

12. Sam, M., **Hansen, A. H.**, Childress, D.S. (2001) Biomechanical Characterization of Prosthetic Feet: Results of the ICRC Geneva Prosthetic Foot. Internal Technical Report, #41, Northwestern University Rehabilitation Engineering Research Program and Prosthetics Research Laboratory.
13. Sam, M., **Hansen, A. H.**, Childress, D.S. (2001) Biomechanical Characterization of Prosthetic Feet: Results of the Handicap International Prosthetic Foot. Internal Technical Report, #39, Northwestern University Rehabilitation Engineering Research Program and Prosthetics Research Laboratory.

Proceedings:

1. Aleksiev, A., Johnson, A., Muhl, R., Sum, J., Pope, M.H., Berge, S.C., **Hansen, A.H.**, Minek, C.M. (1997). Sudden Slip and the Risk of Low Back Injury: Wavelet Analysis. Proceedings of the Orthopedic Research Society.
2. Childress, D., **Hansen, A.**, Knox, E., and Miller, L. (1998). Mechanical Properties of artificial feet: some practical interpretations. Proceedings of the 9th World Congress of the International Society for Prosthetics and Orthotics (ISPO), Amsterdam, presented by Childress in The Netherlands, June 28-July 5.
3. **Hansen, A.H.**, Childress, D.S., Knox, E.H. (1999). Roll-over Shapes of Prosthetic Feet. *North American Gait and Clinical Movement Analysis Meeting*, presented in Dallas, Texas, March 10-13. The abstract appears in *Gait and Posture*, Vol. 9, No. 2, p. 126.
4. **Hansen, A.H.**, Childress, D.S. (2000) Roll-over Shapes of the Human Foot/Ankle Complex. *Chicago 2000 World Congress on Medical Physics and Biomedical Engineering Conference Proceedings*, presented in Chicago, Illinois, July 25.
5. Sam, M., **Hansen, A.H.**, Childress, D.S. (2000) Mechanical Characterization of Prosthetic Feet Using a Prosthetic Foot Loading Apparatus. *Chicago 2000 World Congress on Medical Physics and Biomedical Engineering Conference Proceedings*, presented by Sam in Chicago, Illinois, July 26.
6. Meier, M-R, **Hansen A.H.**, Sam M., Childress D. (2000) Alignment of trans-tibial prosthesis: A step closer towards the 'optimal' alignment. *American Congress of Rehabilitation Medicine (ACRM)*, presented by Meier in Hilton Head, South Carolina, October 19-22.
7. **Hansen, A.**, Childress, D., Brunner, J. (2001) Effects of Shoe Heel Height on the Roll-over Shapes of Foot/Ankle Systems. *Book of Abstracts for the 10th World Congress of the International Society for Prosthetics and Orthotics*, p. T01.2, presented in Glasgow, Scotland, July 3.
8. **Hansen, A.**, Childress, D. (2001) Roll-over Shapes of Prosthetic Feet and an Alignment Hypothesis for Trans-tibial Prostheses. *Book of Abstracts for the 10th World Congress of the International Society for Prosthetics and Orthotics*, p. TH01.2, presented in Glasgow, Scotland, July 5.
9. **Hansen, A.**, Knox, E., Childress, D., Sandifer, A. (2002) Mechanical Properties of Prosthetic and Human Feet: From Shoes to Computer Alignment. *2nd International Conference of Advanced Prosthetics*, presented by Childress in Newport Beach, California, April 18-19.
10. **Hansen, A.**, Sam, M., Meier, M., Childress, D. (2003) Computerized System for the Alignment of Different Kinds of Prosthetic Feet Using Roll-over Shape Principles. *Annual Meeting and Scientific Symposium of the American Academy of Orthotists and Prosthetists*, San Diego, California, March 21.

11. **Hansen, A.**, Childress, D., Miff, S. (2003) Roll-over Characteristics of Human Walking on Ramped Surfaces. *8th Annual Gait and Clinical Movement Analysis Society Meeting*, presented in Wilmington, DE, May 7-10.
12. Miff, S., Childress, D., Gard, S., Meier, M., **Hansen, A.** (2003) Initiation of Walking: Passive or Active? *8th Annual Gait and Clinical Movement Analysis Society Meeting*, presented by Miff in Wilmington, DE, May 7-10.
13. Meier, M.R., Gard, S.A., **Hansen, A.H.**, Childress, D.S. (2003) A Comparison Of The C-Leg And The 3R60 Prosthetic Knee Joint. *Salford's 2nd International Conference on Biomechanics of the Lower Limb in Health, Disease and Rehabilitation*, presented by Meier in Manchester, England, UK, September 1-3.
14. Meier, M.R., Gard, S.A., **Hansen, A.H.**, Childress, D.S. (2003) A Comparison Of The C-Leg And 3R60 Prosthetic Knee Joint Performance. *American Society of Biomechanics Annual Meeting*, presented by Meier in Toledo, OH, USA, September 25-27.
15. **Hansen, A.**, Childress, D., Miff, S., Gard, S. (2003) Quasi-stiffness of the Ankle During Walking at Different Speeds Implications for Design of Prostheses and Orthoses. *Pediatric and Adult Foot and Ankle Workshop: New Horizons in Clinical Treatment and Innovative Technology*, National Institutes of Health, Bethesda, MD, November 15.
16. Meier MR, **Hansen AH**, Sam M and Childress DS. (2003) *Die Abrollform des Fuss-Knöchelkomplexes und ihr Einfluss in der Prothetik [The roll-over shape of the foot-ankle system and its influence in prosthetics]*. Universitätsklinikum Münster, Klinik und Poliklinik für Technische Orthopädie und Rehabilitation, Klinische Prüfstelle für Orthopädische Hilfsmittel, Münster, Germany, December 18.
17. Miff, S., Childress, D., **Hansen, A.**, Gard, S., Meier, M. (2004) Temporal-spatial Symmetries During Gait Initiation and Termination. *9th Annual Gait and Clinical Movement Analysis Society Meeting*, presented by Miff in Lexington, KY, April 21-24.
18. Miff, S., Childress, D., **Hansen, A.**, Gard, S., Meier, M. (2004) The Behavior of the Knee-Ankle-Foot System During Gait Initiation, Steady-State Walking and Gait Termination. *9th Annual Gait and Clinical Movement Analysis Society Meeting*, presented by Miff in Lexington, KY, April 21-24th.
19. Sam, M., **Hansen, A.**, Childress, D. (2004) A Method for Determining a Best-Fit Single Radius Lower Limb Rocker in Normal Walking. *9th Annual Gait and Clinical Movement Analysis Society Meeting*, Lexington, KY, April 21-24.
20. Childress, D.S. and **Hansen, A.H.** (2004) Design, Evaluation and Alignment of Prosthetic Feet Using the Roll-over Shape. *World Congress Orthopadie + Rehatechnik International*, Leipzig, Germany, May 19-22.
21. Fatone S., **Hansen, A.H.**, Gard S.A., Malas B.S. (2004) An Investigation of Alignment and Support in Ankle Foot Orthoses (AFOs). *American Academy of Orthotists and Prosthetists (AAOP), Midwest Chapter Spring Meeting*, Milwaukee, WI, June 3-5.
22. Fatone, S., **Hansen, A.**, Gard, S., Malas, B. (2004) The Effect of Ankle Foot Orthosis Alignment on the Knee During Gait in Post-Stroke Hemiplegia. *11th World Congress of the International Society for Prosthetics and Orthotics*, presented by Fatone in Hong Kong, China, August 1-6.
23. Childress, D., Sam, M., **Hansen, A.**, Meier, M., Lambla, S., Grahn, E., Rolock, J., Knox, E. (2004) The Shape&Roll Prosthetic Foot. *11th World*

- Congress of the International Society for Prosthetics and Orthotics*, presented by Childress in Hong Kong, China, August 1-6.
24. Meier, M., Sam, M., **Hansen, A.**, Childress, D. (2004) The Shape&Roll Prosthetic Foot: Field Testing in El Salvador. *11th World Congress of the International Society for Prosthetics and Orthotics*, presented by Meier in Hong Kong, China, August 1-6.
 25. **Hansen, A.**, Childress, D., Knox, E. (2004) Biomimetic Design of Prosthetic Foot and Ankle-Foot Systems Using Roll-over Shape. *11th World Congress of the International Society for Prosthetics and Orthotics*. Hong Kong, China, August 1-6.
 26. **Hansen, A.**, Meier, M., Lambla, S., Sessoms, P., Childress, D. (2004) Effects of Prosthetic Foot Roll-over Shape Arc Length on Gait of Trans-tibial Prosthesis Users. *11th World Congress of the International Society for Prosthetics and Orthotics*. Hong Kong, China, August 1-6.
 27. Fatone S, **Hansen AH**, Gard SA, Malas BS (2005) Effects on Gait of Ankle Alignment and Foot-Plate Length in Ankle Foot Orthoses (AFOs). *Annual Meeting and Scientific Symposium of the American Academy of Orthotists and Prosthetists*, March 16-19, Orlando, Florida.
 28. Meier M-R., **Hansen A.H.**, Gard, S.A. (2005) Performance on an Obstacle Course: Otto Bock C-Leg vs. Otto Bock 3r60 vs. CaTech SNS. *American Academy of Orthotists and Prosthetists (AAOP) Annual Meeting*, Orlando, FL, March 16-19.
 29. Meier MR, **Hansen AH**, Gard SA, Childress DS (2005) Obstacle Course Performance: Comparison of the C-Leg to Two Conventional Knees. *20th Congress of the International Society of Biomechanics and 29th Annual Meeting of the American Society of Biomechanics*. Cleveland, Ohio.
 30. Meier MR, **Hansen AH**, Gard SA (2006) Does mental loading change the energy expenditure during level walking? A comparison between C-leg, SNS and 3R60. *Annual Meeting and Scientific Symposium of the American Academy of Orthotists and Prosthetists*, March 1-4, Chicago, Illinois.
 31. Fatone S. and **Hansen A.** (2006) Effect of Ankle Foot Orthosis on Roll-over Shape in People with Hemiplegia. Presented by Fatone and Hansen. Winner of the Howard R. Thranhardt Lecture Award at the *Annual Meeting and Scientific Symposium of the American Academy of Orthotists and Prosthetists*, March 1-4, Chicago, Illinois.
 32. Fatone S. and **Hansen A.** (2006) A Geometric Model to Predict the Effect of Ankle Joint Misalignment on Calf Band Movement in an Ankle Foot Orthosis. *Annual Meeting and Scientific Symposium of the American Academy of Orthotists and Prosthetists*, March 1-4, Chicago, Illinois.
 33. Childress D. and **Hansen A.** (2006) Shape: The Portal of Entry to Function. *Second International Scientific Meeting on Pros-TH-otics*, March 24, Wellington, New Zealand.
 34. **Hansen A.**, Childress D., Gard S. (2006) Suggested Invariance of the Human Knee-Ankle-Foot Roll-over Shape for Level Ground Walking. *Dynamic Walking 2006 – Mechanics and Control of Human and Robot Locomotion*. Presented by Gard. May 6-8, Ann Arbor, Michigan.
 35. Fatone S. and **Hansen, A.** (2007) Effect of an Ankle Foot Orthosis on Roll-over Shape in Adults with Hemiplegia following Stroke. *16th Annual Visiting Professor Symposium, Motion Analysis Center, Children's Memorial Hospital*, Chicago, IL, November 9.

36. **Hansen AH**, Gard SA, Childress DS, Ruhe B, Williams R (2007) Automatically-Adapting Ankle-Foot Prosthesis Concept. *12th World Congress of the International Society for Prosthetics and Orthotics*, July 29-August 3, Vancouver, Canada.
37. **Hansen AH**, Steer SA, Childress DS (2007) Lever Compression Molding of Shape&Roll Prosthetic Feet. *12th World Congress of the International Society for Prosthetics and Orthotics*, July 29-August 3, Vancouver, Canada.
38. **Hansen AH**, Meier MR, Childress DS (2007) Roll-over Shape Radii of Able-bodied Children. *12th World Congress of the International Society for Prosthetics and Orthotics*, July 29-August 3, Vancouver, Canada.
39. **Hansen AH**, Meier MR, Steer SA, Sam M, Dossud S, Wu Y, Childress DS (2007) Low-Cost Polyurethane Rubber Prosthetic Foot Cover. *12th World Congress of the International Society for Prosthetics and Orthotics*, July 29-August 3, Vancouver, Canada.
40. **Hansen AH**, Gard SA, Childress DS, Ruhe B, Williams R (2008) Conceptual Design of an Ankle-Foot Prosthesis that Automatically Adapts to Ramped Walking Surfaces. *34th Annual Meeting and Scientific Symposium of the American Academy of Orthotists and Prosthetists*, February 27 – March 1, Orlando, Florida.
41. **Hansen AH**, Dillon M, Fatone S (2008) Source of Increased Dorsiflexion during Gait of Persons with Partial Foot Amputations When Shod or in 'Below-Ankle' Devices. *34th Annual Meeting and Scientific Symposium of the American Academy of Orthotists and Prosthetists*, February 27 – March 1, Orlando, Florida.
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