

## CURRICULUM VITAE FOR PROMOTION AND TENURE

### TOM F. NOVACHECK, MD

#### PROFESSIONAL ADDRESS

Gillette Children's Specialty Healthcare  
Orthopaedics #205015  
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#### IDENTIFYING INFORMATION

##### Education

Degree	Institution	Date Degree Granted
	University of Wisconsin, Richland Center, WI	5/1978
B.S.	University of Wisconsin, Madison Zoology, Madison WI	5/1981
M.D.	University of Wisconsin, Madison Medical School, Madison WI	5/1985
Internship	Pennsylvania State University, College of Medicine, Hershey PA General Surgery	6/1986
Residency	Pennsylvania State University, College of Medicine, Hershey PA Ortho Surgery	6/1990
Fellowship	Newington Children's Hospital, Newington CT Pediatric Orthopaedic Surgery	7/1991

##### Certifications, Licenses

American Board of Orthopaedic Surgery Recertification	2013-2023
American Board of Orthopaedic Surgery Recertification	2003-2013
American Board of Orthopaedic Surgery Certification	1993-2003
South Dakota License #5477	2004-present
Minnesota License #34422	1991-present
Minnesota DEA #BN0635120	1991-present
Connecticut #030715	1990-1992
Pennsylvania #036937-E	1986-1990

##### Academic Appointments

Adjunct Associate Professor, University of Minnesota	2009 - present
Associate Professor, University of Minnesota	2002 - 2008
Assistant Professor, University of Minnesota	1991 - 2002

### **Academic Administrative Appointments**

AOS Representative on Commission for Motion Lab Accreditation (CMLA)	2004 - present
Chair, Adult Patient Task Force Committee Gillette Children's Specialty Healthcare	1994 - 1996
Director, JRG Center for Gait & Motion Analysis Gillette Children's Specialty Healthcare	1991 - present

### **Clinical/Hospital Appointments**

Gillette Children's/ Chief of Staff	2017 - 2018
Gillette Children's/ Associate Medical Director	2014 - present
Gillette Children's/ Strategic Planning Committee-Board of Directors Member	2013 - present
Gillette Children's/ Patient Care Committee	2011 - 2012
Fairview University Medical Ctr./ Courtesy Staff, Mpls., MN	2007 - present
Children's Care Hospital & School/ Consulting Staff, Sioux Falls, SD	2004 - present
Gillette Children's/ Hospital Strategic Planning Committee	2002 - 2003
Gillette Children's/ Past Chief of Staff	2001 - 2002
Gillette Children's/ Chief of Staff	1999 - 2000
Gillette Children's/ Chief of Staff Elect	1997 - 1999
Gillette Children's/ By-Laws Committee	1997 - 1998
Gillette Children's/ Patient Care Committee/ <i>Chair</i>	1997 - 1998
Gillette Children's/ Board Member	1996 - present
Gillette Children's/ Outcomes Assessment Committee	1994 - 1996
Fairview University Medical Ctr./ Consulting Staff, Mpls., MN	1993 - 2004
Gillette Children's/ Patient Care Committee	1993 - 2002
Gillette Children's/ Member at Large/ Executive Committee	1993 - 2002
Gillette Children's/ Staff Physician	1991 - present
Shriner's Hospital Twin Cities/ Staff physician, Mpls, MN	1991 - 2004
Children's Health Care/ Affiliate Staff, Mpls-St. Paul	1991 - present
Regions Hospital/ Associate Staff, St. Paul, MN	1991 - present

### **Consulting Positions**

### **Current Membership and Offices in Professional Organizations**

International Pediatric Orthopaedic Think Tank (IPOTT)	2012 - present
American Orthopaedic Association	2005 - present
International Society for Prosthetics & Orthotics	2000 - present
20 <sup>th</sup> Century Orthopaedic Association	1998 - 2016
American Medical Association	1996 - 2012
Gait and Clinical Movement Analysis Society	1996 - present
President	2000 - 2001
President Elect	1999 - 2000
American Academy of Orthopaedic Surgeons- <i>Fellow Member</i>	1995 - present
AAOS liaison/Commission-Motion Lab Accreditation	2002 - present
Candidate Member	1991 - 1995
Pediatric Orthopaedic Society of North America	1995 - present
Scoliosis Research Society	1994 - present
Active Fellow	1999 - present
Candidate Member	1994 - 1999
Minnesota Orthopaedic Society	1993 - present
Minnesota Medical Association	1992 - 2012

Hennepin County Medical Society		1991 - 2010
American Academy of Cerebral Palsy & Developmental Med		1991 - present
Director-at-Large	2015 - 2018	
Instructional Course Chairperson AACPDM	2009	
Nominating Committee	2007 - present	
Gait Committee	1995 - 1996	
Publications Committee	1996 - 2004	
Ramsey County Medical Society		1991 - present
Twin Cities Orthopaedic Association		1991 - present
University of Wisconsin Medical Alumni Association		1985 - present
Hershey Surgical Society		1985 - present

### Visiting Professorships or Visiting Scholar Positions

1. SOFIELD Lectures/ *Visiting Professor*/Shriners Hospital, Chicago, IL 11/2015
  - Using a problem-centric approach for treating Crouch Gait: Deciding who needs what operation
  - Selective Dorsal Rhizotomy: Is it safe & effective for treating spasticity for individuals with CP?
2. Symposium of Comprehensive Care of Patients with CP- the New Millennium 5/2015  
Taipei, Taiwan *Invited guest speaker/ Visiting Professor*
  - Hip Management in CP
  - Management of Crouch Gait in CP
3. *Visiting Professor*/ Hartford, CT 1/7/2005
4. *Visiting Professor*/ Edmonton, Alberta-Canada 11/2002

### Other professional employment, including military service

Pediatric Orthopaedic Associates/ President	St. Paul, MN	2006 - 2007
Pediatric Orthopaedic Associates/ Treasurer	St. Paul, MN	2003 - 2004
Pediatric Orthopaedic Associates/ Secretary	St. Paul, MN	2002 - 2003
Pediatric Orthopaedic Associates/ President	St. Paul, MN	2001 - 2002
Major, United States Army Reserves		1988 - 1997

## HONORS AND AWARDS FOR RESEARCH WORK, TEACHING, PUBLIC ENGAGEMENT, AND SERVICE

### University of Minnesota

#### External Sources

Top Doctor's Recognition, Mpls-St Paul Magazine, July	2017
Top Doctor's Recognition, Mpls-St Paul Magazine	2016
<i>Best Podium Award/Best Paper</i> - GCMAS Annual Meeting	2016
Schwartz MH, Novacheck TF, Rozumalski A: Long-term changes in femoral anteversion and dynamic hip rotation following femoral derotational osteotomy in children with CP	
Memphis, TN	
Top Doctor's Recognition, Mpls-St Paul Magazine	2015
Top Doctor's Recognition, Mpls-St Paul Magazine	2014
Top Doctor's Recognition, Mpls-St Paul Magazine	2013

<i>Campere Award-Best Paper</i> - 20 <sup>th</sup> Century Orthopaedic Assoc. Meeting Varghese R, Novacheck TF, Schwartz M, Gage JR, Stout JL; Does patellar position change with subsequent growth after patellar tendon advancement in children with Cerebral Palsy Northern Michigan	2013
Elected member- IPOTT (International Pediatric Orthopaedic Think Tank)	2012
<i>Best Paper Award</i> - ESMAC Annual Meeting Schwartz, M.H., Rozumalski, A., Truong, W.H., Novacheck, T.F.: Predicting the outcome of intramuscular psoas lengthening in children with cerebral palsy using preoperative gait data and the random forest algorithm, <i>Gait &amp; Posture</i> , 2013, Vol 37/4 pp 473-479. Vienna, Austria	2011
<i>Best Paper Award</i> - ESMAC Annual Meeting Novacheck TF, Healy MT, Schwartz MH, Stout JL, Gage JR: Is simultaneous hamstring lengthening necessary when performing distal femoral extension osteotomy and patella tendon advancement London, England	2009
<i>Best Paper Award</i> – Gait & Clinical Movement Analysis Meeting Schwartz MR, Rozumalski A, Wervey R, Swanson A, Dykes D, Novacheck TF: Visualizing the in-vivo 3-dimensional motion of the human lumbar spine: A novel technique Springfield, MA	2007
American Orthopaedic Association induction/ San Antonio, TX	2006
EP Maxwell J. Schliefer/ <i>Distinguished Service Award</i>	2004
<i>Fred P. Sage Award</i> for “Normal Walking, An Interactive Instructional CD” AACPD Award for Best New Audiovisual Production in Childhood Disability	1993
Alpha Omega Alpha Member	1985
Midwest Medical Student Research Forum XV-3 <sup>rd</sup> Prize	1984
Farm Bureau Scholarship (Rasey Award)	1982
Undergraduate Honors Degree, Zoology	1981

## RESEARCH AND SCHOLARSHIP

### Grants and Contracts

**External Sources (federal {NIH, NSF, DEO, et.} or state grants, foundation awards, Nationally competitive, etc.)**

#### Current

**Role:** Principal investigator

**External Granting Agency:** Foundation Award from Gillette Children’s Specialty Healthcare

**Grant Title:** Long Term Outcomes of Distal Femoral Extension Osteotomy and Patellar Tendon Advancement for the Treatment of Crouch Gait

**Project Dates:** March 2015-July 2017

**Total Project Direct Costs:** \$380,768

**% Effort/Salary Support:** 2%

#### Pending

**Role:** Principal investigator

**External Granting Agency:** Foundation Award from Gillette Children’s Specialty Healthcare

**Grant Title:** Long Term Outcomes of Femoral Derotation Osteotomy in Patients with Cerebral Palsy

**Project Dates:** June 2017-May 2019

**Total Project Direct Costs:** \$331,000

**% Effort/Salary Support:** 2%

**Role:** Co- investigator

**PI:** Michael Schwartz, PhD

**External Granting Agency:** Foundation Award from Gillette Children's Specialty Healthcare

**Grant Title:** Long Term Outcomes of Selective Dorsal Rhizotomy

**Project Dates:** December 2017-November 2019

**Total Project Direct Costs:** TBD

**% Effort/Salary Support:** 1%

**Grant ID:** 1R01HD092697-01

**PI:** Darryl Thelen, PhD (University of Wisconsin-Madison)

**Role:** Co- investigator

**External Granting Agency:** NIH

**Grant Title:** Non-Invasive Assessment of in vivo Tissue Loads to Enhance the Treatment of Gait Disorders

**Project Dates:** December 2017-November 2019

**Total Project Direct Costs:** 357,285

**% Effort/Salary Support:** 2%

## Past

**Grant ID:** 1R21HD084213-01

**PI:** Darryl Thelen, PhD (University of Wisconsin-Madison)

**Role:** Co- investigator

**External Granting Agency:** NIH

**Grant Title:** Impact of Crouch Gait and Surgical Treatment on Knee Mechanics and Function

**Project Dates:** 12/1/14-11/30/16

**Total Project Direct Costs:** \$44,141

**% Effort/Salary Support:** 2%

**Role:** Co- investigator

**PI:** Nanette Aldahondo, MD

**External Granting Agency:** Medical Education Research Association grant award from Gillette Children's Specialty Healthcare

**Grant Title:** Long Term Outcomes after Selective Dorsal Rhizotomy

**Project Dates:** September 2012-August 2015

**Total Project Direct Costs:** \$18,762

**% Effort/Salary Support:** 1%

**Role:** Co- investigator

**PI:** Marcia Ward, MD

**External Granting Agency:** Gabriella E. Molnar-Swofford Pediatric Physical Medicine & Rehabilitation Research Grant

**Grant Title:** *Assessing the Reliability of Aerobic and Anaerobic Fitness Testing in Children and Adolescents with Cerebral Palsy*

**Project Dates:** *August 2012-August 2013*

**Total Award:** *\$10,000*

**% Effort/Salary Support:** *1%*

#### **Business and Industry (Clinical) Trials**

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**Role:** *Co- investigator*

**PI:** *Julie Switzer, MD*

**External Granting Agency:** *Stryker Inc.*

**Grant Title:** *Lower Extremity Gait Analysis among Geriatric Patients without Functional Impairment*

**Project Dates:** *1/1/13-1/31/16*

**Total Project Direct Costs:** *\$56,875*

**% Effort/Salary Support:** *1%*

#### **University Sources**

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**Role:** *Co- investigator*

**PI:** *Mengnai Li, MD*

**External Granting Agency:** *University of Minnesota Department of Orthopaedic Surgery*

**Grant Title:** *Critical Clinical Evaluation of Treatment of Moderate and Severe Slipped Capital Femoral Epiphysis using a Modified Dunn Procedure*

**Project Dates:** *1/31/14-1/31/16*

**Total Project Direct Costs:** *\$30,000*

**% Effort/Salary Support:** *1%*

**Publications [Note if these are published electronically with a URL if appropriate]**

#### **Impact Analytics**

<i>h-index</i>	<i>h(fl)-index</i>	<b>Total Publications</b>	<b>First/Last Author Publications</b>	<b>Total Citations</b>	<b>First/Last Author Citations</b>
<b>22</b>		<b>41</b>	<b>26</b>	<b>2602</b>	

#### **Peer-Reviewed Publications**

1. Munger ME, Aldahondo N, Krach LE, **Novacheck TF**, Schwartz MH. Long-term outcomes after selective dorsal rhizotomy: A retrospective matched cohort study. *Dev Med & Child Neurology*. May 2017 (publication date/ no pages assigned yet), doi: 10.1111/dmcn.13500
  - Journal Impact Factor; 3.615
  - Times cited: 0
  - Roles:

2. Boyer ER, **Novacheck TF**, Schwartz MH. Changes in hip abductor moment three or more years after femoral derotation osteotomy among individuals with cerebral palsy. *Dev Med & Child Neurology*. May 2017; (**publication date/no pages assigned yet**)  
doi: 10.1111/dmcn.13494
  - Journal Impact Factor; 3.615
  - Times cited: 0
  - Roles:
3. Lenhart RL, Brandon SC, Smith CR, **Novacheck TF**, Schwartz MH, Thelen DG. Influence of patellar position on the knee extensor mechanism in normal and crouched walking. *J Biomech*. Nov 2016; Vol 51:1-7. BM-D16-01106
  - Journal Impact Factor: 2.664
  - Times cited: 1
  - Roles:
4. **Novacheck TF**. Gait Patterns for children with cerebral palsy: proceed with caution. *Dev Med & Child Neurology*. Sept 2016; *Invited Commentary*, DOI: 10.1111/dmcn.13244,
  - Journal Impact Factor: 3.615
  - Times cited: 0
  - Roles:
5. Boyer ER, **Novacheck TF**, Rozumalski A, Schwartz MH. Long-term changes in femoral anteversion and hip rotation following femoral derotation al osteotomy in children with cerebral palsy. *Gait Posture*. Sept 2016; 50:223-228.
  - Journal Impact Factor: 2.347
  - Times cited: 0
  - Roles:
6. Ries A, **Novacheck TF**, Schwartz MH. The efficacy of ankle-foot orthoses on improving the gait of children with diplegic cerebral palsy; a multiple outcome analysis. *PM&R Journal*. March 2015; 7(9):922-929. PMRJOURNAL-D-14-00323R1
  - Journal Impact Factor: 2.175
  - Times cited: 13
  - Roles:
7. Rozumalski A, **Novacheck TF**, Griffith C, Walt K, Schwartz MH. Treadmill vs. Overground running gait during childhood: a qualitative and quantitative analysis. *Gait Posture*. Jan 2015; 41(2):613-618. Reference: GAIPOS-D-14-00411R1
  - Journal Impact Factor: 2.347
  - Times cited: 12
  - Roles:
8. Schwartz MH, Rozumalski A, **Novacheck TF**. Femoral derotational osteotomy: surgical indications and outcomes in children with cerebral palsy. *Gait Posture*. 2014; 39(2):778-783.
  - Journal Impact Factor: 02.347
  - Times cited: 0
  - Roles:

9. MacWilliams BA, Rozumalski A, Swanson AN, Wervey R, Dykes DC, **Novacheck TF**, Schwartz MH. Three Dimensional Lumbar Spine Vertebral Motion During Running Utilizing Indwelling Bone Pins. *Spine*. Oct 2014; 39(26):E1560-E1565. doi: 10.1097/BRS.0000000000000646
  - Journal Impact Factor: 3.024
  - Times cited: 5
  - Roles:
10. Ries A, **Novacheck TF**, Schwartz MH. A data driven model for optimal orthosis selection in children with cerebral palsy. *Gait Posture*. Sept 2014; 40(4):539-544. Reference: GAIPOS4239. doi:10.1016/j.gaitpost.2014.06.011.
  - Journal Impact Factor: 2.347
  - Times cited: 4
  - Roles:
11. MacWilliams BA, Rozumalski A, Swanson AN, Wervey RA, Dykes DC, **Novacheck TF**, Schwartz MH. Assessment of three-dimensional lumbar spine vertebral motion during gait with use of indwelling bone pins. *J Bone Joint Surg Am*. Dec 2013; 95(23):e1841-8. doi: 10.2106/JBJS.L.01469
  - Journal Impact Factor: 4.840
  - Times cited: 6
  - Roles:
12. Schwartz MH, **Novacheck TF**, Rozumalski A. Femoral derotational osteotomy: Surgical indications and outcomes in children with cerebral palsy. *Gait Posture*. Oct 2013; 39(2):778-783. doi:10.1016/j.gaitpost.2013.10.016
  - Journal Impact Factor: 2.347
  - Times cited: 26
  - Roles:
13. Schwartz MH, Rozumalski A, Truong W, **Novacheck TF**. Predicting the outcome of intramuscular psoas lengthening in children with cerebral palsy using preoperative gait data and the random forest algorithm. *Gait Posture*. April 2013; 37(4):473-479. PMID: 23079586. [2011 ESMAC Best Paper Award Winner]
  - Journal Impact Factor: 2.347
  - Times cited: 25
  - Roles:
14. Stout JL, Gorton III GE, **Novacheck TF**, Bagley AM, Tervo RC, Bevans K, Tucker CA. Rasch analysis of items from two self-report measures of motor function: determination of item difficulty and relationships with children's ability levels. *Dev Med & Child Neurology*. May 2012; 54(5):443-450. PMID: 22414116
  - Journal Impact Factor: 3.615
  - Times cited: 4
  - Roles:
15. Lonstein J, Perra J, **Novacheck TF**, Koop S. Results And Complications Following Spinal Fusion For Neuromuscular Scoliosis Using Luque Galveston Instrumentation: Experience In 93 Patients. *Spine*. April 2012; 37(7):583-591. doi: 10.1097/BRS.0b013e318225ebd5
  - Journal Impact Factor: 3.024

- Times cited: 0
  - Roles:
- 8 Gorton III, GE, Stout JL, Bagley AM, Bevans K, **Novacheck TF**, Tucker CA. Gillette Functional Assessment Questionnaire 22-item skill set: factor & Rasch analyses. *Dev Med & Child Neurology*. 2011; 53(3):250-255
    - Journal Impact Factor: 3.615
    - Times cited: 12
    - Roles:
  - 9 Healy MT, Schwartz MH, Stout JL, Gage JR, **Novacheck TF**. Is simultaneous hamstring lengthening necessary when performing distal femoral extension osteotomy and patellar tendon advancement? *Gait Posture*. 2011; 33(1):1-5
    - Journal Impact Factor: 2.347
    - Times cited: 14
    - Roles:
  - 10 Truong W, Rozumalski A, **Novacheck TF**, Beattie C, Schwartz MH. Evaluation of Conventional Selection Criteria for Psoas Lengthening for Individuals With Cerebral Palsy: A Retrospective, Case-Controlled Study. *J Pediatr Orthop*. July/August 2011; Vol 31(5):534-540
    - Journal Impact Factor: 1.33
    - Times cited: 13
    - Roles:
  - 11 **Novacheck TF**, Stout JL, Gage JR, Schwartz MH. Distal Femoral Extension Osteotomy and Patellar Tendon Advancement to Treat Persistent Crouch Gait in Cerebral Palsy-Surgical Technique. *J Bone Joint Surg Am*. Oct 2009; 91 (Supplement 2):271-86
    - Journal Impact Factor: 4.840
    - Times cited: 48
    - Roles:
  - 12 Stout JL, Gage JR, Schwartz MH, **Novacheck TF**. Distal Femoral Extension Osteotomy and Patellar Tendon Advancement to Treat Persistent Crouch Gait in Cerebral Palsy. *J Bone Joint Surg Am*. Nov 2008; 90:2470-2484.
    - Journal Impact Factor: 4.840
    - Times cited: 103
    - Roles:
  - 13 Trost JP, Schwartz MH, Krach LE, Dunn MB, **Novacheck TF**. Comprehensive short-term outcome assessment of selective dorsal rhizotomy. *Dev Med & Child Neurology*. Oct 2008; 50(10):765–771
    - Journal Impact Factor: 3.615
    - Times cited: 38
    - Roles:
  - 14 **Novacheck TF**, Schwartz MR, Rozumalski A, Wervey R, Swanson A, Dykes D. Visualizing the in-vivo 3-dimensional motion of the human lumbar spine: A novel technique. *Gait Posture*. May 2008; 28(3):378-384 [*Runner-up of the ESMAC 2007 Best Paper Award*]

- Journal Impact Factor: 2.347
  - Times cited: 63
  - Roles:
- 15 **Novacheck TF**, Beattie C, Rozumalski A, Gent G, Kroll G. Quantifying the spring-like properties of ankle-foot orthoses (AFOs). *J Pediatr Orthop*. Oct 2007; Vol. 19(4):98-103
- Journal Impact Factor: 1.33
  - Times cited: 27
  - Roles:
- 16 **Novacheck TF**, Gage JR. Orthopaedic management of spasticity in cerebral palsy. *Childs Nerv Syst*. Feb 2007; 23(9):1015-1031
- Journal Impact Factor: 1.081
  - Times cited: 63
  - Roles:
- 17 Tervo R, Symons F, Stout JL, **Novacheck TF**. Parental report of pain and associated limitation in ambulatory children with cerebral palsy. *Arch Phys Med Rehabil*. July 2006; Vol 87(7):928-934
- Journal Impact Factor: 3.289
  - Times cited: 47
  - Roles:
- 18 Schwartz MH, Gasparroni V, **Novacheck TF**. Can a simplified hamstrings length model predict the outcome of hamstrings lengthening surgery for the correction of crouch gait? *Gait Posture*. 2006; 24, S22
- Journal Impact Factor: 2.347
  - Times cited: 2
  - Roles:
- 19 Schwartz MH, Viehweger E, Stout JL, **Novacheck TF**, Gage JR. Comprehensive treatment of ambulatory children with cerebral palsy: An outcome assessment. *J Pediatr Orthop*, January 2004; Vol. 24(1):45-53
- Journal Impact Factor: 1.33
  - Times cited: 137
  - Roles:
- 20 **Novacheck TF**, Trost JP, Schwartz MH. Intramuscular psoas lengthening improves dynamic hip function in children with cerebral palsy. *J Pediatr Orthop*. Mar 2002; Vol. 22(2):158-164
- Journal Impact Factor: 1.33
  - Times cited: 67
  - Roles: Lead person; guarantor of integrity of entire study; developed study concept; defined intellectual content; prepared, edited and reviewed manuscript.
- 21 Tervo R, Azuma S, Stout JL, **Novacheck TF**. Physical functioning and gait analysis in children with cerebral palsy. *Dev Med & Child Neurology*. March 2002; Vol.44(3):185-190
- Journal Impact Factor: 3.615
  - Times cited: 64
  - Roles:

- 22 Gage JR, **Novacheck TF**. An update on the treatment of gait problems in cerebral palsy. *J Pediatr Orthop Part B*. Nov 2001; 10:265-274
- Journal Impact Factor: 1.33
  - Times cited: 173
  - Roles: Developed study concept and design; defined intellectual content; manuscript preparation; editing and review.
- 23 **Novacheck TF**. Managing tendon injuries in runners: The biomechanics of gait provide solid footing for making the diagnosis. *J Musculoskeletal Medicine*. December 2001; 18(12):570-578
- Journal Impact Factor: n/a
  - Times cited: 0
  - Roles:
- 24 Fachanha-Filho FA, Winter RB, Lonstein JE, Koop SE, **Novacheck TF**, L'Heureux EA, Noren CA. Measurement Accuracy in Congenital Scoliosis. *J Bone Joint Surg*. January 2001; Vol. 83-A (1):42-45
- Journal Impact Factor: 4.840
  - Times cited: 0
  - Roles: Conducted experimental studies; data acquisition; manuscript review.
- 25 **Novacheck TF**, Walker KR. Progress in neuromuscular disorders. *Current Opinion in Orthopaedics*. December 2000; 11(6):454-460
- Journal Impact Factor: 0.68
  - Times cited: 0
  - Roles:
- 26 Schwartz MH, **Novacheck TF**, Trost JP. A tool for quantifying hip flexor function during gait. *Gait Posture*. Nov 2000; Vol. 12(3):122-127
- Journal Impact Factor: 2.347
  - Times cited: 38
  - Roles: Guarantor of integrity of entire study; developed study concept; defined intellectual content; manuscript preparation; editing and review.
- 27 **Novacheck TF**, Stout JL, Tervo R. Reliability and validity of the functional assessment questionnaire as an outcome measure in children with cerebral palsy. *J Pediatr Orthop*. January 2000; Vol 20(1):75-81
- Journal Impact Factor: 1.33
  - Times cited: 225
  - Roles: Lead person; guarantor of integrity of entire study; developed study concept and design; conducted literature research; prepared and edited manuscript.
- 28 **Novacheck TF**. Instructional Course Lectures, Running Injuries: A Biomechanical Approach. *J Bone Joint Surg*. August 1998; Vol. 80-A (8):1220-1233
- Journal Impact Factor: 4.840
  - Times cited: 41
  - Roles: Guarantor of integrity of entire study; developed study concept and design; conducted literature research; prepared and edited manuscript.

- 29 Sandvig SM, Schutte LM, Ryan MG, **Novacheck TF**. Gastrocnemius and soleus lengths during running and walking. *Gait Posture*. March 1998; 7(2):161
- Journal Impact Factor: 2.347
  - Times cited: 0
  - Roles:
- 30 **Novacheck TF**. The Biomechanics of Running, Review Article. *Gait Posture*. January 1998; Vol. 7(1):77-95
- Journal Impact Factor: 2.347
  - Times cited: 905
  - Roles: Guarantor of integrity of entire study; developed study concept and design; defined intellectual content; conducted literature research; manuscript preparation; editing and review.
- 31 **Novacheck TF**. Developmental dysplasia of the hip. *Pediatric Clinics of North Amer*. August 1996; 43(4): 829-848
- Journal Impact Factor: 2.12
  - Times cited: 41
  - Roles:
- 32 **Novacheck TF**, Chung CY, Trost JP, Gage JR. Crouch gait in cerebral palsy-the effects of psoas lengthening. *Gait Posture*. 1996; 2(4):184
- Journal Impact Factor: 2.347
  - Times cited: 1
  - Roles:
- 33 Winter SL, Kriel RL, **Novacheck TF**, Luxenberg, MG, Leutgeb, VJ, Erickson, PA. Perioperative blood loss: The effect of Valproate. *Pediatric Neurology*. 1996; Vol 15(1):19-22
- Journal Impact Factor: 1.866
  - Times cited: 0
  - Roles: Defined intellectual content; manuscript editing and review.
  -
- 34 Chung CY, **Novacheck TF**, Gage JR. Hip function in cerebral palsy-the kinematic and kinetic effects of psoas surgery. *Gait Posture*. December 1995; 3(4):280
- Journal Impact Factor: 2.347
  - Times cited: 0
  - Roles:
- 35 Chung CY, **Novacheck TF**, Gage JR. Hip function in cerebral palsy-the kinematic and kinetic effects of psoas surgery. *Gait Posture*. March 1994; 2(1):61
- Journal Impact Factor: 2.347
  - Times cited: 8
  - Roles:

#### **Non-Peer-Reviewed Publications**

1. **Novacheck TF**, Colon K. Managing tendon injuries in runners. *J Musculoskeletal Medicine*. December 2001; Vol 18(12):570+.

2. **Novacheck TF**, Walker KR. Progress in neuromuscular disorders. Current Opinion in Orthopedics. December 2001; Vol 11(6):454-460.
3. Leutgeb V, **Novacheck TF**. Measuring quality in the specialty health care setting. Minnesota Physician. November 1997; Vol. XI(8):32-33.
4. **Novacheck TF**. *Orthopedic Surgery*. Exceptional Parent Magazine. Sept 1997; Vol. 27(9): 83-84.
5. **Novacheck TF**. Developmental dysplasia of the hip. Common Orthopedic Problems I. Pediatric Clinics of North Amer. Aug 1996; Vol. 43(4):829-848.
6. **Novacheck TF**. Common orthopaedic injuries/cerebral palsy- Orthopaedic concerns. Audio-Digest Foundation, Pediatric Orthopaedics, Pediatrics. Oct 1992; Vol. 38(19).

### Articles Submitted for Publication

#### Electronic Publications

#### Educational Videos-Physician Education Material

*Gillette Children's Specialty Healthcare -*

- |   |      |
|---|------|
| <b>Novacheck, TF</b> , Trost, JP: Running: Injury Mechanism and Training Strategies | 1998 |
| <b>Novacheck, TF</b> , Trost, JP: Running and Sprinting: A Dynamic Analysis         | 1996 |
| <b>Novacheck, TF</b> , Gage, JR: Principles of Pathologic Gait in Cerebral Palsy    | 1994 |
| <b>Novacheck, TF</b> , Gage, JR: Normal Walking: An Overview Based on Gait Analysis | 1993 |

#### Books

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|---|------|
| JR Gage, MH Schwartz, SE Koop, <b>TF Novacheck</b> (Editors);<br><u>The Identification and Treatment of Gait Problems in Cerebral Palsy</u> (2 <sup>nd</sup> Ed)<br>2009, Mac Keith Press, London, MacKeith Press, 2009 [ISBN 978-I-898683-65-0]. | 2009 |
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#### Chapters in Books

- |  |      |
|--|------|
| 1. <b>Novacheck TF</b> : Orthoses for Cerebral Palsy   | 2016 |
| 2. <b>Novacheck TF</b> : Spine Orthosis / Chapter for Infantile Scoliosis  | 2016 |
| 3. <b>Novacheck TF</b> : <i>Proximal Femoral Varus Osteotomy Using a 90-Degree Blade Plate</i> , <u>Operative Techniques in Orthopaedic Surgery</u> , Vol 2; Part 4: Section III: 1196-1201, Sam W. Wiesel, Editor-In-Chief, Wolters Kluwer. | 2010 |
| 4. <b>Novacheck TF</b> : <i>Distal Femoral Osteotomy for Crouch Gait</i> , <u>Operative Techniques in Orthopaedic Surgery</u> , Vol 2; Part 4: Section IV: 1339-1344, Sam W. Wiesel, Editor-In-Chief, Wolters Kluwer.                        | 2010 |
| 5. <b>Novacheck TF</b> : <i>Adductor and Iliopsoas Release</i> , <u>Operative Techniques in Orthopaedic Surgery</u> , Vol 2; Part 4: Section IV: 1310-1315, Sam W. Wiesel, Editor-In-Chief, Wolters Kluwer.                                  | 2010 |
| 6. Stout JL, <b>Novacheck TF</b> , Gage JR, Schwartz MH: <i>Treatment of Crouch Gait</i> ,   | 2009 |

- The Identification and Treatment of Gait Problems in Cerebral Palsy, Chapter 5.11: 555-578, JR Gage, MH Schwartz, SE Koop, TF Novacheck, Editors, Mac Keith Press.
7. **Novacheck TF**: *Orthopaedic Treatment of Muscle Contractures*, 2009  
The Identification and Treatment of Gait Problems in Cerebral Palsy, Chapter 5.5:445-472, JR Gage, MH Schwartz, SE Koop, TF Novacheck, Editors, Mac Keith Press.
  8. Trost JP, Dunn ME, Krach LE, Langerak NG, **Novacheck TF**, Schwartz MH: 2009  
*Treatment of Spasticity with Selective Dorsal Rhizotomy*, The Identification and Treatment of Gait Problems in Cerebral Palsy, Chapter 5.2:397-428, JR Gage, MH Schwartz, SE Koop, TF Novacheck, Editors, Mac Keith Press.
  9. **Novacheck TF**, Kroll GH, Gent G, Rozumalski A, Beattie C, Schwartz MH: 2009  
*Orthoses*, The Identification and Treatment of Gait Problems in Cerebral Palsy, Chapter 4.2:327-348, JR Gage, MH Schwartz, SE Koop, TF Novacheck, Editors, Mac Keith Press.
  10. **Novacheck, TF**: *Orthoses for Cerebral Palsy*, AAOS Atlas of Orthoses and Assistive Devices, 4<sup>th</sup> Edition, Chapter 37, M. Hsu & J. Fisk, Editors, Elsevier Health Sciences Co. 2007
  11. **Novacheck, TF**: *Orthopaedic Aspects of Child Abuse*, Lovell & Winter's Pediatric Orthopaedics, 6<sup>th</sup> Edition, Chapter 34:1527-1545, R. Morrissy MD & S. Weinstein MD, Editors, Lippincott Williams & Wilkins Co. 2006
  12. **Novacheck, TF**: *Diplegia and Quadriplegia: Pathology and Treatment*, 2003  
The Treatment of Gait Problems in Cerebral Palsy, Chapter 20:345-381, James R. Gage, Editor, Mac Keith Press
  13. **Novacheck TF**, Schwartz MH; *Functional Assessment of Outcomes*, 2004  
The Treatment of Gait Problems in Cerebral Palsy, Chapter 23:406-422, James R. Gage, Editor, Mac Keith Press.
  14. **Novacheck, TF**: *Management options for gait abnormalities*. 2000  
Congenital Hemiplegia, Chapter 8:98-112, Brian Neville and Robert Goodman, Editors, Mac Keith Press.
  15. **Novacheck, TF**: *Running Injuries: A Biomechanical Approach*, 1998  
AAOS Instructional Course Lecture, Vol. 47(45): 397-406, W. Dilworth Cannon, Jr., Editor, AAOS Press.
  16. **Novacheck, TF**, Gage, JR: *Gait Laboratory*, Pediatric Orthopaedic Secrets, 1998 pp. 29-36, Lynn T. Staheli, MD, Editor, Hanley & Belfus, Inc., Philadelphia, PA.
  17. **Novacheck, TF**: *The biomechanics of running and sprinting*, Running Injuries, 1997 Chapter 2:4-19, Gary N. Guten, MD, Editor, W.B. Saunders Co., Philadelphia, PA.
  18. **Novacheck, TF**: *Surgical intervention in ambulatory cerebral palsy*, 1996  
Human Motion Analysis, Chapter 13:231-254, Gerald F. Harris, Peter A. Smith, Editors, IEEE Press, New York.

19. **Novacheck, TF:** *Walking, running, and sprinting: a three-dimensional analysis* 1993  
*of kinematics and kinetics, AAOS Instructional Course Lectures,*  
 Vol. 44(44):497-506, Douglas W. Jackson, MD, Editor, AAOS Press

## Software Development

## Patents

## Websites

## Presentations

### Invited Oral Presentations at International Professional Meetings, Conferences, etc.

1. Leuven Belgium Gait Course Leuven, Belgium 6/2016
  - Common pathological patterns
  - Crouch: Treatment and Complications
  - Other pathology – mini cases
2. POSI-POSNA Meeting Bangalore, India 1/2016  
 Cerebral Palsy for the General Orthopaedic Surgeon (**Chair**)
  - 3D Gait analysis: What is it and when & how does it help?
  - Lever arm disorder in cerebral palsy
  - Psoas lengthening-Indications and Technique
  - Patellar Tendon Advancement Technique
  - What not to do in cerebral palsy
  - Evaluation of a child with CP
  - SDR/ITB in CP- Is there a role in the walking child?
  - DFEO/PTA – Technique demo on cadaver
3. POSNA/SLAOTI Meeting (Faculty Member) Bogota, Colombia 10/2015
  - Current treatment of gait disorders in spastic cerebral palsy
  - Distal femoral extension osteotomy and patellar tendon advancement
  - Flatfoot surgical treatment
  - Treatment of crouch gait
  - Treatment of foot deformities in the ambulatory cerebral palsy patient
  - Idiopathic scoliosis

- Co-Moderator/ Neuromuscular Symposium
4. IPOTT – *FREE PAPER* Vienna, Austria 9/2015
  - How far to advance the patella when treating crouch gait in Cerebral Palsy: How far is enough? What is too far?
5. ESMAC – *FREE PAPERS* Heidelberg, Germany 9/2015
  - Long term changes in dynamic hip rotation following femoral derotational osteotomy; MH Schwartz, A Rozumalski, TF Novacheck
  - Long-term effects of patellar tendon advancement on patella height and proximal tibial growth; JL Stout, C Beimesch, R Varghese, MH Schwartz, TF Novacheck  
 (*Nominated for Best Paper Award*)  
 Chairperson Free Paper session: *Multilevel Problems in CP*
6. Associação de Assistência à Criança Deficiente Sao Paolo, Brazil 7/2015
  - (AACD) 65<sup>th</sup> Anniversary Congress
  - Outcomes of SDR (Keynote lecture)

- PAO surgical technique in Neuromuscular Disorders
  - Surgical techniques update in Torsional Deformities (Lever Arm Dysfunction)
  - Foot deformities in CP: Gillette Children's experience
  - Crouch gait management: Gillette Children's experience
7. 7<sup>th</sup> East European & Mediterranean Cerebral Palsy Poznan, Poland 6/2015  
& Developmental Medicine (EEMCPDM Meeting)
- Gait Analysis-Evaluation & treatment indications of crouch gait in cerebral palsy.
  - Selective Dorsal Rhizotomy in Cerebral Palsy.
  - Lower Extremity Problems:
  - Pathophysiology, Evaluation and treatment principles.
8. Argentina Gait Course Corrientes, Argentina 3/2014
- Spasticity Management-indications and outcomes
  - SDR and reversible treatments
  - Surgical techniques update-stiff knee and rectus femoris transfer. Tips
  - Surgical techniques update in torsional deformities. Tips
  - Surgical techniques update in foot deformities. Indications, tips
  - Indications and technique of Hamstrings Lengthening today
  - Outcomes of Psoas Lengthening Surgery
  - Treating Crouch Gait in Growing child
  - Distal extension femoral osteotomy-patellar tendon advancement.
  - Surgical technique, tips
  - Ganz Periacetabular osteotomy (indications, surgical technique, how to avoid complications)
  - Acetabular Dysplasia: Best choice in neurological problems
  - Current state of art of gait analysis
  - Future of gait Analysis
9. IPOTT Meeting Vancouver, Canada 9/2013
- Verghese RA, Stout JL, Schwartz MH, Novacheck TF:  
Does patellar position change with subsequent growth after patellar tendon advancement in children with CP?
10. GCMAS Gait Course Leuven, Belgium 6/2013
- Clinical Gait Analysis: A Focus on Interpretation
  - Session on details of surgical techniques
  - Meet the experts
11. POSNA Annual Meeting Toronto, Canada 5/2013
- The risks of proximal femoral hardware retention And removal in children with cerebral palsy.  
Truong W, Novacheck TF, Howard A, Narayanan U.
12. AACPD Annual Mtg. GCMAS Symposium Toronto, Canada 9/2012
- Crouch/ Instructional Course Lecture  
Stout JL, Walt K, Novacheck TF
  - SDR/ Instructional Course Lecture  
Ward M, Graupman P, Novacheck TF
13. Shaping the Future: Current trends in Research & Clinical Management Dublin, Ireland 3/2012
- Orthopaedic Management through childhood  
*Keynote Speaker*
14. Capetown Gait Course South Africa 1/2011
15. *Invited Visiting Professor* Chicago, IL 11/2010
16. Sao Paulo Gait Course Brazil 10/2010

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| 17 | GCMAS Gait Course  | Leuven, Belgium                            | 6/2010  |
| 18 | SEFIP Symposium  | Barcelona, Spain                           | 5/2010  |
| 19 | Gait Course  | Milan, Italy                               | 4/2009  |
| 20 | Evaluation & Management of Children with CP  | Santiago, Chile                            | 11/2008 |
|    | <ul style="list-style-type: none"> <li>- Using Gait Analysis", Teleton Institute</li> <li>- Understanding and treatment of gait dysfunction in children with Cerebral Palsy.</li> <li>- Understanding muscle tone dysfunction – Algorithm for spasticity control and treatment.</li> <li>- Lever arm dysfunction: Crouch gait. Understanding &amp; treatment</li> <li>- Neuromuscular Foot Deformity: Evaluation and Treatment</li> <li>- Kinetic interpretation in children with Cerebral Palsy.</li> </ul> |  |         |
| 21 | Second Advanced Course of Spasticity & Gait Dysfunction"   | Fleni Institute<br>Buenos Aires, Argentina | 11/2008 |
|    | <ul style="list-style-type: none"> <li>- Understanding and treatment of gait dysfunction in children with Cerebral Palsy.</li> <li>- Understanding muscle tone dysfunction – Algorithm for spasticity control and treatment.</li> <li>- Lever arm dysfunction: Crouch gait. Understanding &amp; treatment</li> <li>- Present and future of gait laboratory</li> <li>- Kinetic interpretation in children with Cerebral Palsy.</li> </ul>   |  |         |
| 22 | AACPDM Annual Meeting  | Vancouver BC, Canada                       | 10/2007 |
|    | <ul style="list-style-type: none"> <li>- 10<sup>th</sup> Annual TC Sports Medicine Conference/ Marathon Weekend</li> <li>- Pediatric Back Pain: Spondylolysis, Scheuermann's Disease and other aches and pains.</li> </ul>   |  |         |
| 23 | Scoliosis Research Society Meeting   | Edinburgh, Scotland                        | 9/2007  |
|    | <ul style="list-style-type: none"> <li>- Visualizing the in-vivo 3-dimensional motion of the human lumbar spine: A novel technique</li> <li>- Perioperative complications of spinal fusion for neuromuscular scoliosis treated with Luque-Galveston instrumentation - related factors &amp; effect on duration of hospital stay in a consecutive series of 100 patients.</li> <li>- Late complications following spinal fusion for neuromuscular scoliosis-experience in 100 patients</li> </ul>             |  |         |
| 24 | 16 <sup>th</sup> Annual ESMAC Mtg.   | Athens, Greece                             | 9/2007  |
|    | <ul style="list-style-type: none"> <li>- The in-vivo three-dimensional motion of the human lumbar spine during gait.</li> </ul>  |  |         |
| 25 | 43 <sup>Rd</sup> Congress of Argentine Orthopaedics & Traumatology   | Buenos Aires, Argentina                    | 12/2006 |
|    | <ul style="list-style-type: none"> <li>- Child Abuse</li> <li>- Running Biomechanics</li> <li>- Tone Management in CP</li> </ul>   |  |         |
| 26 | Guys Hospital  | London, England                            | 5/2007  |
| 27 | Belgium Gait Course  | Leuven, Belgium                            | 5/2007  |
| 28 | GCMAS Annual Meeting   | Amsterdam                                  | 9/2006  |
| 29 | University of Auckland - <i>Keynote address</i>  | New Zealand                                | 2/2005  |
|    | <ul style="list-style-type: none"> <li>- Movement Biomechanic Symposium</li> <li>- Grand Rounds/ Department of Pediatric Orthopaedics Starship Pediatric Hospital/ Auckland, New Zealand</li> </ul>  |  |         |

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| 30 | Recent findings on walking disorders in children<br>Reggio Emilia  | Milan, Italy          | 11/2003 |
| 31 | ESMAC Mtg.   | Leuven, Belgium       | 9/2002  |
| 32 | Sweden Gait Course/ <i>Invited Speaker</i><br>- CP Management and the use of Gait Analysis as a<br>Tool to Determine what Treatment to do<br>- Running Biomechanics<br>- Motion Analysis as a tool to evaluate movement abnormalities                                    | Stockholm, Sweden     | 10/2001 |
| 33 | ESMAC Meeting/ <i>Invited Speaker</i>  | Rome, Italy           | 10/2001 |
| 34 | ESMAC Mtg. – Keynote address   | Lund, Sweden          | 10/2000 |
| 35 | ESMAC Sweden Gait Course/ <i>Invited Speaker</i>   | Helsingborg, Sweden   | 10/2000 |
| 36 | Italian Gait Course/ <i>Invited Speaker</i>  | Milan, Italy          | 6/2000  |
| 37 | POSNA Cerebral Palsy Symposium<br>- Spasticity and orthopaedics: An update on the<br>Management of tone, torsion and tightness in<br>Neuromuscular disease   | Vancouver, Canada     | 5/2000  |
| 38 | Nordic Pediatric Orthopaedic Federation<br>Gait Course<br>- Kinematics: Foot<br>- Kinematics: Knee, Hip and Pelvis<br>- Errors in Gait Analysis<br>- Surgical Intervention in CP: Knee & Hip<br>- Assessing Functional Outcomes<br>- Gait Analysis in Other Applications | Vedbaek, Denmark      | 9/1999  |
| 39 | Gait Lab Course<br><i>Invited Speaker</i><br>- Gait overview and terminology<br>- Putting the gait cycle together: KM , KN & EMG<br>- Sagittal plane: Treatment options-orthotic/surgical<br>- Transverse plane treatment: Surgical/Orthotics<br>- Amputee gait          | Caracas, Venezuela    | 11/1998 |
| 40 | ESMAC- sponsored Gait Course<br>- Sagittal plane treatment options: Orthotic/Surgical<br>- Pathological gait in CP<br>- Assessing functional outcomes  | Belfast, Ireland      | 9/1998  |
| 41 | Lower Extremity Orthotic Management in CP<br><i>Invited Speaker</i><br>- Introduction to clinical gait analysis and gait terminology<br>- Normal kinematics<br>- Review of kinematics, kinetics, & WMG<br>- Role of orthopaedic surgeon in team approach to CP           | Toronto, Canada       | 11/1997 |
| 42 | 5 <sup>th</sup> International Pediatric Orthopaedic Symposium<br>Neuromuscular Diseases/ <i>Invited Speaker</i><br>- Principles of pathological gait in CP<br>- Gait analysis in children with myelomeningocele  | Freiburg, Germany     | 10/1997 |
| 43 | ESMAC- sponsored Gait Course   | Dublin, Ireland       | 9/1996  |
| 44 | European Society of Movement Analysis in<br>Children/ Sponsored Gait Course<br>- The effect of psoas lengthening on hip function<br>in cerebral palsy  | Enschede, Netherlands | 10/1995 |
| 45 | Congenital Hemiplegia Conference   | London, England       | 9/1995  |

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| 46 | North Amer. Gait Conference/ <i>Moderator</i>  | Waterloo, Canada    | 6/1995 |
| 47 | Gait & Movement Analysis Course  | Montpellier, France | 5/1994 |
|    | - Surgical intervention in ambulatory CP   |                     |        |
|    | - Walking, running, and sprinting: A three-Dimensional analysis of kinematics & kinetics |                     |        |

**Invited Oral Presentations at National Professional Meetings, Conferences, etc.**

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|-----|---|------------------|---------|
| 1.  | GCMAS Annual Meeting  | Memphis, TN      | 5/2016  |
|     | -Schwartz MH, Novacheck TF, Rozumalski A:<br>Long-Term Changes in Femoral Anteversion and<br>Dynamic Hip Rotation Following Femoral Derotational<br>Osteotomy in Children with Cerebral Palsy |                  |         |
| 2.  | Univ of Utah Grand Rounds/ <i>Visiting Professor</i>  | Salt Lk City, UT | 1/2016  |
|     | - Gait Analysis: State of the Art & Future Directions   |                  |         |
|     | - SDR Instructional course  |                  |         |
| 3.  | GCMAS Annual Meeting  | Portland, OR     | 3/2015  |
|     | - Pathologic Gait I/ <i>Moderator</i>   |                  |         |
| 4.  | GCMAS Annual Meeting Tutorial   | Newark, DE       | 6/2014  |
|     | -Indications and Explicit Guidance for Bony Surgery Using<br>Gait Analysis- T Novacheck, J Stout, A Rozumalski, M Schwartz<br><i>Panelist</i> for Clinic Cases                                |                  |         |
| 5.  | POSNA- Master Technique Lecture   | Hollywood, CA    | 5/2014  |
|     | -DFE with PTA   |                  |         |
| 6.  | APTA Meeting / <i>SDR Instructional Course</i>  | Las Vegas, NV    | 2/2014  |
| 7.  | IPOS Annual Meeting   | Orlando, FL      | 12/2014 |
| 8.  | APTA Annual Mtg.- <i>SDR Instructional Course</i>   | Las Vegas, NV    | 2/2014  |
|     | - Selective Dorsal Rhizotomy: Candidate Selection,<br>Post-Operative Rehabilitation, & Outcome<br>TF Novacheck, JL Stout, M Ward, K Walt  |                  |         |
| 9.  | IPOS Annual Meeting   | Orlando, FL      | 12/2013 |
|     | - Decision-Making and Techniques for Managing Hallux Valgus<br>in Children with Neuromuscular Disorders   |                  |         |
|     | -Larsen's Syndrome – Management of Hip, Knee, and Foot Deformities  |                  |         |
|     | -Pain Management and Rehabilitation after SEMLS   |                  |         |
|     | -Essentials of Pediatric Orthopaedics II:<br>-Torsional Differences and Foot  |                  |         |
| 10. | AACPDM Annual Meeting   | Milwaukee, WI    | 10/2013 |
|     | - Ries A Novacheck TF, Rozumalski AR, Schwartz MH:<br>Predicting changes in gait associated with ankle-foot<br>use in children with CP.   |                  |         |
|     | - Aldahondo N, Krach LE, Trost JP, Novacheck TF,<br>Dunn ME, Schwartz JH: Long term outcomes after SDR  |                  |         |
|     | - Ward M, Novacheck TF, Kim P: Part I – Applying SDR to<br>improve gait and ambulatory function in the child with CP  |                  |         |
| 11  | GCMAS Annual Meeting  | Cincinnati, OH   | 5/2013  |
|     | - Rozumalski, A, Novacheck, TF, Schwartz, MH;<br>A Motion Analysis Based Technique for Measuring Frontal<br>Plane Lower-Limb Alignment in Patients with Fixed Knee<br>Flexion Contractures    |                  |         |
|     | - Schwartz MH, Rozumalski AR, Novacheck TF:   |                  |         |

Criteria and Outcomes for Femoral Derotation Osteotomies;  
The Roles of Anteversion and Dynamic Hip Rotation

- Stout JL; Schwartz MH; Rozumalski AR, Novacheck TF:  
Indications and Explicit Guidance for Soft Tissue Surgery  
Using Gait Analysis
- Gage JR, Stout JL, Wervey R, Novacheck TF.  
Changes in Secondary Effects of Lever-Arm Dysfunction  
in Children with Spastic Diplegia Following Bilateral Femoral  
Derotation Osteotomy Procedure

12	POSNA Tutorial	St. Paul, MN	1/2013
	- Evaluation & Management of Persistent Crouch Gait Due to CP		
13	Concepts & Techniques for Early Intervention in	Louisville, KY	9/2012
	- Pediatric Hip Conditions - <i>Keynote Speaker</i>		
14	GCMAS Annual Meeting	Grand Rapids, MI	5/2012
15	POSNA Tutorial	St. Paul, MN	10/2011
	- Evaluation & Management of Persistent Crouch Gait Due to CP		
16	AACPDM Annual Meeting	Las Vegas, NV	10/2011
	- ITB in higher functional patients		
17	20 <sup>th</sup> Century Orthopaedic Association Meeting	Idaho	8/2011
18	Connecticut Gait course	Connecticut, MA	6/2011
19	POSNA Annual Meeting	Quebec, Canada	5/2011
20	GCMAS Annual Meeting	Washington, DC	4/2011
21	APTA Mtg/ <i>Invited Speaker</i>	New Orleans, LA	2/2011
22	AACPDM Annual Meeting	Washington, DC	9/2010
23	APTA Meeting – Crouch Course	San Diego, CA	2/2010
24	AACPDM Annual Meeting	Phoenix, AZ	9/2009
	- Moderator: Free Paper Session D: Orthopedics and “Beyond”		
25	European Society of Movement Analysis Adults and Children (ESMAC) <i>Moderator:</i> Intervention studies, 18 <sup>th</sup> Annual Mtg.	London, England	9/2009
26	AACPDM Annual Mtg.- <i>Instructional Course Lecture</i>	Phoenix, AZ	9/2009
	- Evaluation and surgical treatment of persistent crouch gait in individuals with CP, TF Novacheck, MH Schwartz, JL Stout, K Walt, JR Gage		
27	AACPDM Annual Mtg. Symposium-Specialty Day	Phoenix, AZ	9/2009
	- Orthopaedic Surgical Intervention		
	- Decision-making and Management of Gait Disorders: How do we decide what to do? How do we do it? What makes a difference?		
28	GCMAS Annual Meeting	Denver, CO	3/2009
29	Pediatric Orthopaedic Practitioners Society	Albuquerque, NM	5/2008
30	GCMAS Annual Meeting	Hartford, CT	5/2008
	- Indications for skeletal surgery in cerebral palsy		
	- Crouch Gait: Indications for orthopaedic treatment		
	- Gait Analysis: Intriguing case examples		
	- Lower extremity surgical treatment in cerebral palsy		
31	AAOS-POSNA Specialty Day	San Francisco, CA	3/2008
	- Management of Crouch Gait in CP		
32	University of Wisconsin/School of Medicine Lecture	Madison, WI	4/2007
	- Evaluation and Treatment of Crouch Gait in Cerebral		

- Palsy: A Case Study-Driven Discussion/ Dr. Noonan
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|----|---|--------------------|---------|
| 33 | ICL Evaluation & Treatment of Crouch Gait in CP   | Springfield, MA    | 4/2007  |
| 34 | AACPDM Annual Meeting   | Boston, MA         | 9/2006  |
|    | - Instructional Course Lectures:  |                    |         |
|    | - Crouch Gait ICL   |                    |         |
|    | - Orthopaedic Grand Rounds x 2  |                    |         |
|    | - Functional outcomes assessment tools ICL  |                    |         |
| 35 | POSNA Annual Meeting  | San Diego, CA      | 5/2006  |
|    | - Treatment of Crouch Gait with Distal Femoral Extension Osteotomy and/or Patellar Advancement: A Review of Complications |                    |         |
| 36 | AACPDM Annual Meeting   | Orlando, FL        | 9/2005  |
|    | - Podium Presentation: Parent report of pain behavior in ambulatory children with cerebral palsy                          |                    |         |
|    | - Instructional Course Lectures:  |                    |         |
|    | - Crouch Gait   |                    |         |
|    | - Measurement Tools   |                    |         |
| 37 | GCMAS Tutorial  | Portland, OR       | 2/2005  |
|    | - Tone Management & Orthopaedic Surgery   |                    |         |
|    | - The clinical decision-making paradigm at Gillette Children's SH   |                    |         |
| 38 | AACPDM Annual Meeting   | Los Angeles, CA    | 9/2004  |
|    | - Orthopaedic Aspects of Intrathecal Baclofen Pump Management   |                    |         |
|    | - Outcomes Assessment in Cerebral Palsy   |                    |         |
|    | - Management of Crouch Gait in Cerebral Palsy   |                    |         |
|    | - Clinical Applications of Muscle Length Modeling   |                    |         |
| 39 | POSNA Annual Meeting  | St. Louis, MO      | 5/2004  |
|    | - Distal femoral extension osteotomy & patellar Advancement in crouch gait (Dr. James Gage, Presenter)                    |                    |         |
| 40 | Grand Rounds  | Madison, WI        | 5/2004  |
| 41 | GCMAS Annual Meeting  | Lexington, KY      | 4/2004  |
| 42 | Grand Rounds  | Des Moines, IA     | 2/2004  |
| 43 | Grand Rounds/Symposium – Motion Analysis  | Grand Forks, ND    | 10/2003 |
| 44 | POSNA Annual Meeting  | Amelia Island, FL  | 5/2003  |
| 45 | Grand Rounds/ Symposium- Gait Analysis & CP   | Sioux Falls, SD    | 5/2003  |
| 46 | POSNA Annual Meeting  | Salt Lake City, UT | 5/2002  |
| 47 | International Peds Orthopaedic Symposium  | Orlando, FL        | 8/2001  |
|    | - Normal & Pathological Gait  |                    |         |
|    | - Running Injuries in children & adolescents  |                    |         |
|    | - Valgus foot in CP   |                    |         |
| 48 | AAOS Annual Meeting   | San Francisco, CA  | 3/2001  |
| 49 | 20 <sup>th</sup> Century Orthopaedic Associate Meeting  | Bolton Landing, NY | 8/2000  |
| 50 | AAOS Annual Meeting   | Orlando, FL        | 3/2000  |
|    | - Biomechanics of Running and Running Injury Patterns   |                    |         |
|    | - Cerebral Palsy: Current Concepts in Orthopaedic Management  |                    |         |
| 51 | ISPO Meeting  | Dallas, TX         | 11/1999 |
|    | - Lower Extremity Orthotic Management in CP   |                    |         |
|    | - Prescription Criteria for Orthoses in Ambulatory Children in CP   |                    |         |
| 52 | POSNA Annual Meeting  | Orlando, FL        | 5/1999  |

- Reliability and Validity of the Function Assessment Questionnaire as an Outcome Measure in Children With CP
- 53 CCHC/GCSH Gait Course Hartford, CT 4/1999
  - Treatment Options: Soft Tissue Surgery
  - Management of Spasticity
  - Assessing Functional Outcomes
- 54 NASGCMA Meeting Dallas, TX 3/1999
  - Reliability and Validity of the Function Assessment Questionnaire as an Outcome Measure in Children With CP
  - Orthopaedic Surgery for Beginners
- 55 AAOS *Instructional Course Lecture* Anaheim, CA 2/1999
  - Biomechanics of Running and Running Injury Patterns
  - Cerebral Palsy: Current Concepts in Orthopaedic Management
- 56 20<sup>th</sup> Century Orthopaedic Associate Portland, OR 9/1998
  - Biomechanics of Running-How Movement Strategies Change Between Walking and Running
- 57 POSNA Cerebral Palsy Symposium Cleveland, OH 5/1998
  - Outcomes assessment in CP
- 58 NASGCMA Meeting San Diego, CA 4/1998
  - Gastrocnemius and Soleus Lengths during Running and Walking
- 59 AAOS *Instructional Course Lecture- Invited Speaker* New Orleans, LA 3/1998
  - Biomechanics of running and running injury patterns
  - CP: Current concepts in orthopaedic management
- 60 AACPD Annual Meeting Portland, OR 9/1997
  - Management of patients with cerebral spasticity
  - Rational approach to surgical treatment of gait Problems in spastic diplegia
- 61 CCMC/GCSH Gait Course Hartford, CT 4/1997
  - Treatment options: Orthotic, Surgical, Coronal Plane
  - Assessing Function Outcomes
  - Normal Kinematic
- 62 NASGCMA Conference Chicago, IL 4/1997
  - Orthopaedics for the Non-Orthopaedist
- 63 AAOS Annual Meeting San Francisco, CA 2/1997
  - Running Injuries
- 64 Children's Hospital of Pittsburgh Pittsburgh, PA 11/1996
  - Orthopaedic surgical treatments of CP
  - Controversies in Hip Surgery
  - Gait
- 65 St. Charles Hospital Bend, OR 10/1996
  - Chronic running injury mechanisms- Does a Knowledge of Biomechanics provides New Insight?
- 66 POSNA Meeting Phoenix, AZ 5/1996
  - Intermuscular Psoas Lengthening at the Pelvic Brim
- 67 AAOS Annual Meeting Atlanta, GA 2/1996
  - Analysis of Running & Sprinting: Implications for Training and Injuries
- 68 AAOS Annual Meeting- *Instructional Course Lecture* Orlando, FL 2/1995
  - The Analysis of Running and Sprinting:

	Implications for Training and Injuries		
69	Marshfield Clinic presentation - the use of gait analysis in the evaluation and Treatment of gait in cerebral palsy	Marshfield, WI	8/1994
70	Developmental-Behavioral Disorders - Rhizotomy; A Hot Topic - The analysis of Motion: A challenge in developmental disabilities - Developmental-behavioral disorders	Hilton Head, SC	5/1994
71	NASGCMA Meeting - Hip function in CP- The kinematic & kinetic effects of psoas surgery	Portland, OR	4/1994
72	AAOS Instructional Course Lecture Series - Gait Analysis: The dynamic assessment tool of the future	New Orleans, LA	2/1994
73	ASAMI Scientific Program - Compensatory gait in limb lengthen discrepancy- Clinic and laboratory patterns	New Orleans, LA	2/1994
74	AACPDM Annual Meeting - Normal Walking: An Overview of Gait Based On Gait Analysis	Nashville, TN	10/1993
75	Newington Gait Course - Surgical Intervention CP – Clinical Gait Analysis	Newington, CT	4/1993
76	AAOS Annual Meeting- <i>Instructional Course Lecture</i> - Gait Analysis: The Dynamic Assessment Tool Of the Future	New Orleans, LA	2/1993
77	AACPDM Annual Meeting 10/1992 Orthotics for Ambulation in Paraplegia	San Diego, CA	
78	AAOS Annual Meeting - The Significance of Bead Loosening in the PCA Knee	Atlanta, GA	2/1988
79	AOA – Residents Conference - The Significance of Bead Loosening in the PCA Knee	Boston, MA	3/1988

**Invited Oral Presentations at Local & Regional Professional Meetings, Conferences, etc.**

1.	GCSH Partners in Care Webinar: - “The Evaluation and Management of the Complex Child via Telemedicine; guidance from more than 10 cumulative years in the field”	St. Paul, MN	7/2017
2.	GCSH Grand Rounds - Long term outcomes following distal femoral extension osteotomy and patellar tendon advancement	St. Paul, MN	2/2017
3.	GCSH Resident Lecture - Prone pelvic osteotomies/ SIM demo	St. Paul, MN	9/2016
4.	GCSH ATD Journal Club presentation	St. Paul, MN	3/2016
5.	GCSH PM&R Resident Didactics talk	St. Paul, MN	3/2016
6.	REGIONS Hospital Trauma Lecture/ Child Abuse GCSH sponsored Conference	St. Paul, MN	12/2015
7.	Musculoskeletal Management in Pediatrics - Orthotic Selection/ co-presenting with John Sytniak @ St. Paul RiverCentre	St. Paul, MN	12/2015
8.	GCSH/CCMA Gait Course	Mpls., MN	5/2015

- Qualitative Description of Normal Gait
  - Avoid Iatrogenic Complications
  - Treatment of Crouch Gait (including DFEO/PTA) & Complications
  - Running Biomechanics/ Injuries
9. GCSH Resident Lecture/ Pelvic Ost. & SIM demo St. Paul, MN 3/2015
  10. 20<sup>th</sup> Century Orthopaedic Association Crystal Mt, MI 8/2013
    - Does patellar position change with subsequent growth after patellar tendon advancement in children with CP  
(*Compreere Award Winner*)
  11. MN Memorial Orthopaedic Conference Mpls., MN 10/2012
    - Patella alta & crouch gait in skeletally immature patients
  12. 3<sup>rd</sup> Biennial Pediatric Neuroscience Conference Mpls., MN 5/2012
    - Instructional Course Lecture: SDR
  13. GCSH/CCMA Gait Course Mpls., MN 5/2012
  14. Musculoskeletal Conference/ Westin Hotel Edina, MN 12/2011
    - SEMLS Expectations, benefits and follow up
  15. GCSH Grand Rounds/ Gait St. Paul, MN 10/2011
  - 16.
  17. MN Memorial Orthopaedic Conference St. Paul, MN 9/2011
    - Gait Analysis- Cerebral Palsy & case discussions
  18. Peds Trauma Summit, Region's Hospital St. Paul, MN 9/2011
  19. Research Education Day/ GCSH St. Paul, MN 5/2011
    - Physical Fitness in Kids with Disabilities
  20. Musculoskeletal Conference/ Westin Hotel Edina, MN 12/2010
    - Overview and Management of DDH
  21. MN Pediatric Orthopaedic Conference Rochester, MN 11/2010
    - Musculoskeletal Conference at Mayo Clinic
  22. Peds Neuroscience Conference Mpls., MN 5/2010
    - The role of clinical gait analysis in the treatment Of children with neurological disorders
    - Translating research into clinical practice: Treatment of spasticity with selective dorsal rhizotomy
  23. MN Orthopaedic Society presentation (Hyatt Regency) Mpls., MN 5/2010
    - Presentation w/Dr. Walter Truong
  24. Grand Rounds/ Regions Hospital St. Paul, MN 1/2010
    - Surgical Hip Dislocation-Indications, Techniques, PreOp Management
  25. GCSH/CCMC Gait Course St. Paul, MN 6/2009
  26. GCSH Musculoskeletal Course St. Paul, MN 12/2008
    - Developmental dysplasia of the Hip/ The Limping Child
  27. Children who have Special Needs Conference Brainerd, MN 10/2008
    - Treating the ambulatory child who has CP
  28. Mayo Clinic/ In-service presentation Rochester, MN 6/2008
    - Motion Analysis Lab Outcomes Assessment
  29. Peds Neuroscience Conference Mpls., MN 5/2008
  30. Fairview Ridges Hospital/ Grand Rounds Mpls., MN 3/2008
  31. GCSH Conference at St. Paul River Center St. Paul, MN 12/2007
    - Management of Peds Musculoskeletal Concerns
  32. Wallace Cole Conference Rochester, MN 11/2007
    - Running biomechanics: Insight into training

and running injuries

33. 20 <sup>th</sup> Century Orthopaedic Association	Brainerd, MN	8/2007
34. Wallace Cole Conference	Mpls., MN	10/2006
- Gait biomechanics in myelomeningocele		
35. Grand Rounds & Symposium	Duluth, MN	10/2006
36. GCSH/CCMC Gait Course	St. Paul, MN	5/2006
37. GCSH Nursing Inservice/ Compartment Syndrome	St. Paul, MN	3/2006
38. Cole Memorial Pediatric Ortho Seminar	St. Paul, MN	9/2005
- Management of ambulatory diplegia		
39. GCSH/CCMC Gait Course	St. Paul, MN	5/2004
40. Exceptional Parent Magazine	St. Paul, MN	5/2004
- Moderator for on-line seminar		
- Solving Pediatric Gait Deficiencies with Dynamic Bracing		
41. GCSH Cerebral Palsy Conference	St. Paul, MN	3/2003
42. GCSH/CCMC Gait Course	St. Paul, MN	4/2002
43. Cole Memorial Pediatric Ortho Conference	St. Paul, MN	11/2001
44. 4 <sup>th</sup> Annual Spring Sports Medicine Conference	Mpls., MN	6/2001
- Biomechanics of Running		
45. 15 <sup>th</sup> Annual Family Medicine Today Conference	St. Paul, MN	3/2001
- The use of gait analysis/ Holiday Inn East		
46. Mentor Connection/ Northeast Metro 916	Mahtomedi, MN	2001
47. Pediatric Family Practitioners Conference	Minnetonka, MN	12/2000
- Scoliosis/ Marriott Hotel		
48. Lakeview Hospital Conference	Stillwater, MN	10/2000
- The Limping Child		
49. Regions Pediatric Staff/Regions Hospital	St. Paul, MN	9/2000
- Developmental Dysplasia of the Hip		
50. GCSH/CCMC Gait Course	St. Paul, MN	4/2000
- Evaluating treatment outcomes for patients with cerebral palsy		
- Clinical look at muscle physiology, muscle mechanics and force		
- Categorizing problems: Bony, soft tissue, spasticity, motor control		
- Bony Issues: Lever arm dysfunction II		
- Options for treatment of abnormal tone		
- Crouch gait treatment presentations & postop results		
- Use of EMG in understanding deformity		
51. POSNA Tutorial @ GCSH	St. Paul, MN	4/2000
- A clinical and engineering look at muscle Physiology, muscle mechanics & muscle force		
- Looking back/Sources of error/ What we've learned		
52. GCMS Annual Meeting	Rochester, MN	4/2000
53. Pediatric Orthopaedic Conference	Mpls., MN	12/1999
- The Limping Child		
54. Cole Memorial Pediatric Ortho Conference	St. Paul, MN	10/1999
- Running Biomechanics @ MN History Center		
55. Hugh O'Brien Seminar/ Hamline University	St. Paul, MN	6/1999
- Technology and Its Impact on Your Relationships in the New Millennium		
56. Spasticity Conference @ GCSH	St. Paul, MN	5/1999

- Role of Gait Analysis in Spasticity Management
  - Role of Gait Analysis in Patient Selection  
For ITB
- |   |               |         |
|---|---------------|---------|
| 57. Pediatric Ortho Update for Primary Care Physicians  | St. Paul, MN  | 12/1998 |
| - Developmental Dysplasia of the Hips   |               |         |
| 58. Cole Memorial Pediatric Ortho Seminar   | Mpls., MN     | 10/1998 |
| @ Shriners Hospital/Twin Cities   |               |         |
| - Foot Stabilization-Management   |               |         |
| 59. POSNA Tutorial @ GCSH   | St. Paul, MN  | 4/1998  |
| - Gait Analysis in the Treatment of<br>Neuromuscular Disease  |               |         |
| 60. GCSH/CCMC Gait Course   | St. Paul, MN  | 3/1998  |
| - Introduction to Clinical Gait Analysis and<br>Gait Terminology  |               |         |
| - Normal Kinematics   |               |         |
| - Review of Kinematics, Kinetics, & WMG   |               |         |
| - Sagittal Plane Treatment Options: Orthotic/Surgical   |               |         |
| - Assessing Functional Outcomes   |               |         |
| 61. Pediatric Orthopaedic Conference @ GCSH   | St. Paul, MN  | 12/1997 |
| - The Limping Child   |               |         |
| 62. St. Cloud Conference/ Kelly Inn   | St. Cloud, MN | 10/1997 |
| - The role of gait analysis in the treatment of<br>children with cerebral palsy                             |               |         |
| 63. Cole Memorial Pediatric Ortho Conference  | St. Paul, MN  | 9/1997  |
| - Biomechanics of Forward Human Locomotion:<br>How & Why Movement Strategies Change as<br>We Move Faster    |               |         |
| 64. Pediatric Ortho Update for Primary Care Physicians  | St. Paul, MN  | 12/1996 |
| - Developmental Dysplasia of the Hip  |               |         |
| 65. AACPDM Annual Meeting   | Mpls., MN     | 9/1996  |
| - Regional Approach to Surgical Treatment of<br>Gait Problems in Spastic Diplegia                           |               |         |
| 66. POSNA Tutorial @ GCSH   | St. Paul, MN  | 4/1996  |
| - Gait Analysis of the 90's   |               |         |
| 67. GCSH/CCMC Gait Course   | St. Paul, MN  | 3/1996  |
| - Introduction to Clinical Gait Analysis  |               |         |
| - Normal Kinematics   |               |         |
| - CP Treatment Options: Orthotic/Surgical   |               |         |
| - Assessing Functional Outcomes in CP   |               |         |
| 68. Pediatric Potpourri Conference  | Lutsen, MN    | 2/1996  |
| - Hip Pain & Common Causes of Limping in<br>Childhood: How to Assess, When to Refer                         |               |         |
| 69. Pediatric Ortho Update for Primary Care Physicians  | St. Paul, MN  | 11/1994 |
| - Developmental Dysplasia of the Hips   |               |         |
| 70. St. Johns Hospital Grand Rounds   | St. Paul, MN  | 7/1994  |
| - Common Pediatric Hip Orthopaedic Problems   |               |         |
| 71. Shriners Hospital Twin Cities/Peds Ortho Conference   | Mpls., MN     | 5/1994  |
| - Psoas Release in Cerebral Palsy   |               |         |
| 72. GCSH/CCMC Gait Course   | St. Paul, MN  | 4/1994  |
| - Introduction to Clinical Gait Analysis & Terminology<br>applications of Gait Analysis in Other Conditions |               |         |



## Peer-reviewed Abstracts

Boyer ER, Stout JL, Laine JC, Gutknecht SM, Olivera LH, Munger ME, Schwartz MH, **Novacheck TF**; *Does distal femoral extension osteotomy with patellar tendon advancement in individuals with cerebral palsy help in the long-term?* American Academy of Cerebral Palsy and Developmental Medicine Mtg., Montreal, Canada, Sept 2017.

Boyer ER, Stout JL, Laine JC, Gutknecht SM, Olivera LH, Munger ME, Schwartz MH, **Novacheck TF**; *Does distal femoral extension osteotomy with patellar tendon advancement in individuals with cerebral palsy help in the long-term?* International Society of Biomechanics, Brisbane, Australia, July 2017.

Boyer ER, **Novacheck TF**, Schwartz MH; *Does hip abductor function increase after a femoral derotation osteotomy in individuals with cerebral palsy?* International Society of Biomechanics, Brisbane, Australia, July 2017

Schwartz MH, **Novacheck TF**, Boyer ER; *Excessive Femoral Anteversion Does Not Cause Excessive Anterior Pelvic Tilt*. GCMAS Annual Conference, Memphis, Tennessee – *ACCEPTED as Podium Presentation*. May 2017

Boyer ER, Stout JL, Laine JC, Gutknecht SM, Olivera LH, Munger ME, Schwartz MH, **Novacheck TF**; *Does distal femoral extension osteotomy with patellar tendon advancement in individuals with cerebral palsy help in the long-term?* GCMAS Annual Conference, Memphis, Tennessee, May 2017

Boyer ER, **Novacheck TF**, Schwartz MH; *Does rectus femoris transfer mitigate iatrogenic kinematics after distal femoral extension osteotomy and patella tendon advancement in individuals with cerebral palsy?* GCMAS Annual Conference, Memphis, Tennessee, May 2017

Boyer ER, **Novacheck TF**, Schwartz MH. *Does hip abductor function increase after a femoral derotation osteotomy in individuals with cerebral palsy?* GCMAS Annual Conference, Memphis, Tennessee, May 2017

Boyer ER, Stout JL, Laine JC, Gutknecht SM, Olivera LH, Munger ME, Schwartz MH, **Novacheck TF**; *Does distal femoral extension osteotomy with patellar tendon advancement in individuals with cerebral palsy help in the long-term?* European Paediatric Orthopaedic Society, Barcelona, Spain, May 2017

Meghan Munger\*<sup>1</sup>, Nanette Aldahondo<sup>1</sup>, Linda Krach<sup>2</sup>, **Tom Novacheck**<sup>1,3</sup>, Michael Schwartz<sup>1,3</sup>:

<sup>1</sup>*Gillette Children's Specialty Healthcare, USA*

<sup>2</sup>*Courage Kenny Rehabilitation Institute,*

<sup>3</sup>*University of Minnesota, Department of Orthopaedic Surgery, USA*

Comprehensive long-term outcomes 13.5 years following selective dorsal rhizotomy, ESMAC Meeting, Sept 2016, Seville Spain

**Novacheck TF**, Garcia J; *Telemedicine use to support orthopedic and sleep medicine pediatric subspecialty care in rural areas*, American Telemedicine Association, Minneapolis, MN, May 2016

Rozumalski, A, **Novacheck TF**, Griffith C, Walt K, Schwartz MH, “*Over Ground vs. Treadmill Walking: Differences in Moments Are Due to Differences in Ground Reaction Forces*” Proc. Of annual meeting of the ESMAC, 9/2014, Rome, Italy

Truong W, **Novacheck TF**; *Should proximal femoral implants be removed routinely in children with cerebral palsy?* AOA/COA Combined Mtg, Montreal, Canada (Abstract # 1021), June 2014

Schwartz MH, Rozumalski A, **Novacheck TF**: *Criteria and Outcomes for Femoral Derotational Osteotomies: The Roles of Anteversion and Dynamic Hip Rotation.* GCMAS Annual Mtg., Cincinnati, OH, May 2013

Gage JR, Stout JL, Wervey RA, **Novacheck TF**: *Changes in Secondary Effects of Lever-Arm Dysfunction in Children with Spastic Diplegia Following Bilateral Derotational Femoral Osteotomies.* GCMAS Annual Mtg., Cincinnati, OH, May 2013

Aldahondo N, Krach LE, **Novacheck TF**, Dunn ME, Trost J, Schwartz MH: *Long-term outcomes after selective dorsal rhizotomy.* GCMAS Annual Mtg., Cincinnati, OH, May 2013

Rozumalski A, **Novacheck TF**, Schwartz MH: *A Motion Analysis Based Technique for Measuring Frontal Plane Lower-Limb Alignment in Patients with Fixed Knee Flexion Contractures.* GCMAS Ann Mtg., Cincinnati, OH, May 2013

**Novacheck TF**, Stout JL, Rozumalski A, Schwartz MH: *Indications and Explicit Guidance for Soft Tissue Surgery Using Gait Analysis (Symposium)* GCMAS Annual Mtg. Cincinnati, OH, May 2013

**Novacheck TF**, Varghese, Ranjit, Stout JL, Schwartz MH: *Does Patellar Position Change with Subsequent Growth after Patellar Tendon Advancement in Children with Cerebral Palsy?* AACPDM Mtg, Toronto, Canada, Sept 2012

Reis A, Rozumalski A, **Novacheck TF**, Schwartz MH: *Do Ankle-Foot Orthoses Improve Gait for Individuals with Cerebral Palsy?* AACPDM Mtg, Toronto, Canada, Sept 2012

Reis A, Rozumalski A, **Novacheck TF**, Schwartz MH: *Do Ankle-Foot Orthoses Improve Gait for Individuals with Cerebral Palsy?* ESMAC Mtg, Toronto, Canada, Sept 2012

**Novacheck TF**: Varghese, Ranjit, Stout JL; Schwartz MH: *Does Patellar Position Change with Subsequent Growth after Patellar Tendon Advancement in Children with Cerebral Palsy?* POSNA Mtg, Denver, Colorado, May 2012

**Novacheck TF**, Healy MT, Schwartz MH, Stout JL, Gage JR: *Is Simultaneous Hamstring Lengthening Necessary When Performing Distal Femoral Extension Osteotomy and Patella Tendon Advancement?* European Society of Movement Analysis in Adults and Children (ESMAC) 18th Annual General Meeting, London, UK, Sept 2009

Stout JL, **Novacheck TF**, Tervo R: *Skill Mastery of Typically Developing Children Using the Gillette Functional Assessment Questionnaire: Establishing Standards in Preschoolers,* European Society of Movement Analysis in Adults and Children (ESMAC) 18th Annual General Meeting, London, UK, Sept 2009

**Novacheck TF**, Rozumalski A, Truong WH, Schwartz MH, Beattie C: *Explicit kinematic criteria predict postoperative improvements following surgical lengthening of the psoas tendon in patients with cerebral palsy*, European Society of Movement Analysis in Adults and Children (ESMAC) 18th Annual General Meeting, London, UK, Sept 2009

Healy MT, Schwartz MH, Stout JL, Gage JR, **Novacheck TF**: "Is simultaneous hamstring lengthening necessary when performing distal femoral extension osteotomy and patella tendon advancement?" 9/24/09, AACPD Annual Mtg., Phoenix, AZ, Sept 2009

Elli K, Schwartz MH, Sohrweide S, **Novacheck TF**; *Reliability of a multi-segment foot model*, presented at GCMAS Meeting, Richmond, VA, April 2008.

Elli K, Schwartz MH, Sohrweide S, **Novacheck TF**; *Reliability of the subtalar joint neutral position*, presented at GCMAS Meeting, Richmond, VA, April 2008

Schwartz MH, Rozumalski A, Wervey RA, **Novacheck TF**, Swanson A, Dykes D; *The in-vivo three-dimensional motion of the human lumbar spine during gait*, in *European Society for Movement Analysis in Adults and Children*, Athens, Greece, 2007

Swanson A, Dykes D, Schwartz MH, Rozumalski A, Wervey RA, **Novacheck TF**; *Visualizing and Quantifying the In Vivo Three-Dimensional Motion of the Human Lumbar Spine During Functional Activities*, in *North American Spine Society*, Austin, TX, 2007

Swanson A, Dykes D, Schwartz MH, Rozumalski A, Wervey RA, and **Novacheck TF**; *Visualizing and Quantifying the In Vivo Three-Dimensional Motion of the Human Lumbar Spine: A Novel Technique*, in *Scoliosis Research Society*, Edinburgh, England, 2007

Schwartz MR, **Novacheck TF**, Rozumalski A, Wervey R, Swanson A, Dykes D: *Visualizing the in-vivo 3-dimensional motion of the human lumbar spine: A novel technique*, presented at GCMAS Meeting, Springfield, MA, April 2007

Rozumalski A, Schwartz MH, **Novacheck TF**, Wervey R, Swanson A, Dykes D: *Quantification of pelvic soft tissue artifact*, presented at GCMAS Meeting, Springfield, MA April 2007.

Stout JL, **Novacheck TF**, Gage JR, Schwartz MH: *Gait analysis for surgical decision-making in cerebral palsy: Hamstring or no hamstring surgery?* Presented at GCMAS Meeting, Springfield, MA, April 2007.

Trost JP, Schwartz MH, Dunn MB, Krach LE, **Novacheck TF**: *Comparison of outcomes for independent and dependent ambulatory children with cerebral palsy*, presented at GCMAS Meeting, Springfield, MA, April 2007.

**Poster Abstract Presentations at Professional Meetings, Conferences, etc.**

*Poster Presentation*: Claire F. Beimesch, Ranjit A. Varghese, Jean L. Stout, Michael H. Schwartz, **Tom F. Novacheck**; *Does patellar position change with growth after patellar tendon advancement in children with cerebral palsy?* E-Poster #50, 4/2015, POSNA Annual Meeting, Atlanta, GA

*E-poster:* Stout JL; Beimesch CR; Varghese RA; Schwartz MH; **Novacheck TF**: Long-term effects of patellar tendon advancement based on tibial-physical angle. E-Poster, 4/2015, POSNA Annual Meeting, Atlanta, GA

*Poster Presentation:* Walter Truong, **Tom F. Novacheck**, Eyun-Jung Shin, Jasjit Lochab, Ariel Rischall, Andrew Howard, Unni Narayanan; Should proximal femoral implants be removed routinely in children with cerebral palsy? 6/2014, AOA Annual Meeting, Montreal, QC, Canada

*Poster Presentation:* Adam Rozumalski, **Tom F. Novacheck**, Chad Griffith, Katie Walt, Michael Schwartz Over Ground vs. Treadmill Walking: Differences in Moments are Due to Differences in Ground Reaction Forces, 10/2014, ESMAC Conference, Rome, Italy

*Poster Presentation:* Jean L. Stout, MS, PT, George Gorton, BS, Raymond C. Tervo, MD, **Tom Novacheck, MD**, Comparison of Skill Difficulty for Typically Developing Children and Children with Gait Impairment Using the Gillette Functional Assessment Questionnaire, 9/2009, 66<sup>th</sup> AACPDM Annual Mtg. Toronto, Ontario, Canada

*Poster Presentation:* Jean L Stout, **Tom F Novacheck**, Raymond Tervo; Skill Master of Typically Developing Children Using the Gillette Functional Assessment Questionnaire: Establishing Standards in Pre-School Children, 9/2009, 63<sup>rd</sup> AACPDM Annual Mtg. Phoenix, AZ

*Poster Presentation;* Georte E Gorton, Jean L Stout, **Tom F Novacheck**, Anita M Bagley, Katherine Bevans, Raymond Tervo, Carole A Tucker;: Confirmatory Factor Analysis and Item Level Analysis of the Gillette Functional Assessment Questionnaire 22 Item Skill Set, 9/2009, 63<sup>rd</sup> AACPDM Annual Mtg., Phoenix, AZ

*Poster Presentation:* Jean L Stout, **Tom F Novacheck**, George Gorton, Raymond Tervo, Anita M Bagley, Garole Tucker; Gillette Functional Assessment Questionnaire: Application of Rasch Analysis to Link Classification Levels to Performance of Functional Skills in Children with Disabilities, 9/2009, European Society of Movement Analysis in Adults and Children (ESMAC) Annual Mtg., London, UK

*Poster Presentation:* Jean Stout, Michael Schwartz, James R. Gage, **Tom F. Novacheck**: Distal Femoral Extension Osteotomy and Patellar Tendon of advancement for Treatment of Persistent Crouch Gait in CP, 6/2006, AOA Annual Meeting, San Antonio, Texas

*e-Poster;* **Tom F. Novacheck**: **Name of Poster ??**, 5/2005, POSNA Meeting, Ottawa, ON, Canada

*Poster Presentation;* Jean Stout, Raymond Tervo, **Tom F. Novacheck**: Reliability and Validity of the Functional Assessment Questionnaire as an Outcome Measure in Children with Cerebral Palsy, 9/1999, AACPDM Meeting, Toronto, Canada.

*Poster Presentation;* **Tom F. Novacheck**: When is an Osteotomy Better Than a Total Hip Replacement?, 4/1996, Minnesota Orthopaedic Society, Mpls., MN

*Poster Presentation;* **Tom F. Novacheck**: The Addition of Distraction Forces to LGI to Improve Correction of Pelvic Obliquity and Decompression, 9/1994, SRS Meeting, Portland, OR

## Other Key Activities and Accomplishments

### TEACHING AND CURRICULUM DEVELOPMENT

#### University of Minnesota (repeat for other university or academic positions)

UofM Core Curriculum, University of MN Kinesiology & Gait	Mpls., MN	12/2012
UofM Core Curriculum, University of MN Idiopathic and Neuromuscular Scoliosis	Mpls, MN	3/2011
UofM Core Curriculum, University of MN Kinesiology & Gait	Mpls., MN	10/2010
UofM Grand Rounds, University of MN Surgical Dislocation of the Hip	Mpls, MN	9/2010
UofM Core Curriculum, University of MN Kinesiology & Gait	Mpls, MN	10/2008
UofM Core Curriculum Idiopathic & Neuromuscular Scoliosis	Mpls, MN	11/2006
UofM Core Curriculum, University of MN Gait, Joint & Amputee	Mpls, MN	9/2006
UofM Core Curriculum Neuromuscular and Idiopathic Scoliosis	Mpls, MN	1/2001
UofM Grand Rounds Biomechanics of Running Gait	Mpls, MN	8/1999
UofM Core Curriculum Idiopathic Scoliosis/ Neuromuscular Scoliosis	Mpls, MN	1/1999
UofM Residency Core Curriculum Kinesiology and Gait Laboratory Assessment	Mpls, MN	10/1998
UofM Grand Rounds The Limping Child	Mpls, MN	1/1998
UofM Mechanical Engineering Department/ Seminar Biomechanics of Running & Sprinting Gait	Mpls, MN	6/1997
UofM AM Conference Introduction to Children in Orthopaedics	Mpls, MN	8/1994
UofM AM Conference Septic Arthritis/Osteomyelitis	Mpls, MN	2/1994
UofM AM Conference How Kids are Different	Mpls, MN	7/1993
UofM AM Conference Septic Arthritis/Osteomyelitis	Mpls, MN	1/1993
UofM Grand Rounds Developmental Dysplasia of the Hip	Mpls, MN	9/1992
UofM Medical School Pediatrics CP: Pathogenesis & Treatment/Topics and Advances in Pediatrics	Mpls, MN	6/1992

#### Course/Lecture List

#### Curriculum Development

#### Collaborative Efforts and Activities

SLAOTI/POSNA Meeting / <i>Faculty Member</i>	Bogota, Colombia	10/2015
POSNA Cerebral Palsy Symposium/ <i>Organizer &amp; Presenter</i>	Albuquerque, NM	5/2008

**Faculty Development Activities regarding teaching**

**Continuing Medical Education**

Peds Course for the Primary Care Physician/ CHC-St. Paul		9/1992
Newborn Orthopaedic Problems/ CME Course		
Orthopaedics for Pediatricians/ GCSH		11/1993
CME Course		
GCSH/CCMC Gait Lab Course -1992, 1994, 1996, 1998, 2000, 2002, 2004,2006, 2009, 2012, 2015		
POSNA sponsored Gait Analysis Tutorial	1996, 1998, 2000, 2001, 2011, 2013	
AAOS ICL Management of Cerebral Palsy		1996-2001
AAOS ICL Biomechanics of Running		1994-2000
Pediatric Orthopaedic Update/ GCSH (yearly)		1993-present

**ADVISING AND MENTORING**

**Undergraduate Student Activities**

Undergraduate research projects (UROPS, directed research, lab participation, etc.)

Undergraduate summa theses or honors projects directed

Undergraduate advising

**Graduate Student Activities**

Master's Theses Directed

Master's Student Advises

Doctoral Dissertations Directed

Kathleen Reilly	2008
Kristen Ely	2006
Krista Evans	2004
Adam Rozumalski	2002
Kunale Katdare	1998
Gaio Lakin	1997

Doctoral Dissertations Directed

Doctoral Students Advised (Academic advising for all or part of graduate students' program)

Doctoral Committees Served on

Jean L. Stout	Rehabilitation Science	(current)
Adam Rozumalski	Biomedical Engineering	2016
Chris Kronich		1996
Scott Hayden		1995
Kristen Nelson		1994
Nancy Green		1993

### **Professional Student Activities**

Professional students supervised

### **Post-doctoral fellows supervised**

Elizabeth Boyer

2016

### **Residents supervised**

### **Visiting Scholars Hosted**

### **Other Mentoring Activities**

Director, GCSH Gait Lab Fellowship Program

Antonio Munoz, MD	Chile	2016-1017
Lucas Araujo de Oliveira, MD	Brazil	2015-2016
Heidi Elke Viehweger, MD	France	2001-2002
Luigi Piccinni, MD	Italy	1998-1999
Unni Narayanan, MD		1997-1998
Akinobu Nemoto, MD	Japan	1996-1997
Paulo Selber, MD	Brazil	1995-1996
Chin Youb Chung, MD	Hong Kong	1993-1994

## **CLINICAL SERVICE**

### **Clinical Leadership Accomplishments**

### **Quality Improvement Projects**

### **Clinical Service Responsibilities**

GCSH - 7 Orthopaedic Clinics per month

GCSH - On call/ACOR clinics approximately 45 days per year

GCSH – 3 Telemedicine clinics per month

GCSH – 7 Surgery days per month

## **PROFESSIONAL SERVICE AND PUBLIC OUTREACH**

### **Service To The Discipline/Profession/Interdisciplinary Area(s)**

#### **Editorships/Journal Review Experience**

Reviewer/ Spine Deformity	2012 - present
Reviewer/ J Pediatric Orthopaedics	2011 - present
Reviewer/ J of Biomechanics	2002 - present
Editor-in-Chief/ Gait & Posture	1999 - 2002
Ad hoc Reviewer/ J Bone & Joint Surgery	1999 - present
Editorial Board Member/ Developmental Medicine & Child Neurology	1998 - 2003
Associate Editor/ Gait & Posture	1995 - 1999
Editorial Board Member/ Gait & Posture	1993 - 1995
Reviewer/ Gait & Posture	1993 - present

**Review panels for external funding agencies, foundations, etc.**

## Program review experience

### Organization of conferences, workshops, panels symposia

GCSH/CCMC Gait Course: 1992, 1994, 1996, 1998, 2000, 2002, 2004, 2006, 2009, 2012	St. Paul, MN	2015 +
Update on Evaluation & Management of Children with CP Selective dorsal rhizotomy (SDR)-the experience in the USA Surgical techniques update in torsional deformities (lever Arm Dysfunction) Indication and outcomes of surgical lengthening of the hamstrings Results and surgical technique of psoas lengthening Crouch gait surgical management in children Distal femoral extension osteotomy and patellar tendon advancement: Surgical Techniques Surgical correction of acetabular dysplasia; Slater, Shelf, Pemberton, Dega, San Diego PAO surgical technique in neuromuscular disorders (Ganz) Current state of the art of Gait Analysis Future of Gait Analysis	Santiago, Chili	10/2015
AACPDM – Instructional course IC 6: Avoiding pitfalls in the management of gait dysfunction in children with CP H9: Long-term effects of patellar tendon advancement on patellar height and proximal tibial growth IC 16: Applying selective dorsal rhizotomy to improve gait and ambulatory function in the child with CP BRK 24: Indications and explicit guidance for soft tissue surgery using gait analysis L4: The role of energy expenditure in differentiating between movement disorders in children with CP	Austin, TX	10/2015
AACPDM Tutorial/ GCSH Eval & treatment of Crouch Gait in individuals with CP	St. Paul, MN	1/2009
POSNA Tutorial – Crouch Gait/ GCSH	St. Paul, MN	6/2009
Second Advanced Course of Spasticity & Gait Dysfunction Understanding & treatment of gait dysfunction in children with Cerebral Palsy. Understanding muscle tone dysfunction-Algorithm for spasticity control and treatment. Lever arm dysfunction: Crouch gait/understanding & treatment Present and future of gait laboratory Kinetic interpretation in children with Cerebral Palsy.	Buenos Aires, Argentina Fleni Institute	11/2008
AACPDM Annual Mtg/ Instruction Course on Crouch Gait <i>Moderator for free paper session</i>	Atlanta, GA	9/2008
Pediatric Orthopaedic Practitioners Society Cole Meeting organizer	St. Paul, MN	2001
POSNA Tutorial	St. Paul, MN	3/2000
POSNA Tutorial - Gait Analysis of the 90's	St. Paul, MN	4/1996
POSNA Tutorial Gait Analysis in Treatment of Neuromuscular Disease	St. Paul, MN	4/1998

**Committee memberships [indicate if the candidate served as chair]**

**Public Advocacy**

**Service to the University/Medical School/Department**

**University of Minnesota [indicate dates of service activities]**

**University-wide service**

**Medical School Service and Intercollegiate Service**

**Department/Unit Service**

**Community Outreach Activities**

Yearly mission trips to Ecuador/ Clinic & Surgery

Quito, Ecuador

2005 - present