

Date: February 2007

COLLEGE OF ENGINEERING
Faculty Activities Summary

Name: Gary E. Christensen

Academic Rank and Date Appointed (Mo/Yr): Associate Professor, July 2003

Date of First University of Iowa Appointment (Mo/Yr): January 1997

Department(s): Electrical and Computer Engineering and Radiation Oncology

Office Address: 4324 S.C. Office Phone: 319-335-6055

Highest Academic Degree: Doctorate of Science

Special Fields of Knowledge: Image Registration, Probability, Stochastic Processes, Image & Signal Processing, Medical Imaging, VLSI Design, Parallel Programming

Present Research Interests: Computational Anatomy, Global Shape Models, Medical Imaging

<u>Institution</u>	<u>Dates Attended</u>	<u>Major</u>	<u>Degree</u>	<u>Date Awarded</u>
Washington Univ.	1984-1988	E.E.	B.S.	1988
Washington Univ.	1984-1988	C.S.	B.S.	1988
Washington Univ.	1988-1989	E.E.	M.S.	1989
Washington Univ.	1990-1994	E.E.	D.Sc.	1994

2. Professional Experience

2.1 Academic

University	Position	Dates	Main Courses Taught
Washington Univ.	Comp. Prog. at the Biomedical Computer Lab.	1987-1988	
Washington Univ.	Res. Asst. under R. Morley	1988-1989	
Washington Univ.	Res. Asst. at the Biomedical Computer Lab.	1990-1991	
Washington Univ.	Res. Asst. under M.I. Miller	1991-1994	
Washington Univ.	Res. Asst. Prof. Surgery	1994-1996	
Washington Univ.	Res. Asst. Prof. Radiology	1994-1996	
Washington Univ.	Asst. Prof. of Surgery	1996-1997	
Washington Univ.	Asst. Prof. of Radiology	1996-1997	
Washington Univ.	Affiliate Asst. Prof. of EE	1996-1997	
Washington Univ.	Director of Craniofacial	1994-1997	

The Univ. of Iowa	Assistant Prof. of ECE	1997-2003	Signal & Image Proc., Circuits
The Univ. of Iowa	Associate Prof. of ECE	2003-present	Signal & Image Proc., Computers, Circuits
The Univ. of Iowa	Associate Prof. of Radiation Oncology	2006-present	

3. Professional Activities

3.1 Scientific and Professional Societies

(Give grade of membership. List committee memberships, chairmanships, or offices held with inclusive dates.)

IEEE – Senior Member

3.2 Honors, Prizes, and Awards (Provide year of award)

- 1) 2004-present, The Robert and Virginia Wheeler Faculty Fellow of Engineering
- 2) 1/05 – 6/05, Obermann Scholar
- 3) 1997-2001 Whitaker Foundation Young Investigator.
- 4) 1995 Ebbsman Prize Honorable Mention, XIVth International Conference on Information Processing in Medical Imaging, Brest, France.
- 5) 1988 Outstanding Senior, Electrical Engineering Dept., Washington Univ.
- 6) 1988 Academic Excellence Award, Computer Science Dept., Washington Univ.
- 7) 1984-1988 Robert W. Otto Scholarship.
- 8) 1984 First Place Overall, St. Louis Science Fair and Third Place in Physics at the International Science and Engineering Fair.

4. Service Activities

(Include activities of last two years and indicate scope of involvement and responsibility, i.e., committee member, chairman, etc. Provide inclusive dates for activities.)

4.1 Department

ECE Undergraduate Committee, F'03 Chair, S'04 Chair, F'04, F'05, S'05
 ECE ABET Committee, F'04, F'05, S'06
 ECE Undergraduate Recruitment Director, S'03, F'03, S'04
 ECE/Medical School Recruitment Committee, S'04, F'04, F'05, S'06
 ECE Laboratory Committee, S'02
 ECE Department web site designer and Webmaster, 8/2000-present
 ECE Self-Study Committee, F'00
 ECE Graduate Committee, F'97, S'98, F'98, S'99, F'99, S'00
 ECE Faculty Recruitment Committee, F'98, S'99
 ECE Secretary, F'98, S'99, F'99, F'01, S'02

4.2 College

2/03 – 5/04, College Computer Services Committee, Chairman
S'04, ECE-BME Medical Imaging Curriculum Committee
7/1998 – present, Participated in the College of Engineering Parent Orientation.
2/2006 Explore Engineering Day presenter

4.3 University

3/04 – present, mentor, “Multidisciplinary Clinical Research Career Development Program” K12 training grant Gary Hunninghake P.I., grant submitted 3/04.
4/98 – present, Internal advisory committee member, “Innovative Neuroimaging Technologies Training Program,” Richard Hitchwa P.I.
3/99, Participated in a SWARM group meeting to promote interdisciplinary activities at the University of Iowa.

4.4 Community, State, National and International

2005-present **President** of Information Processing in Medical Imaging board.
2004-present **External Scientific Advisory Committee Member**, Virginia Commonwealth University (VCU) Radiation Oncology Program Project Grant
2006 **Technical Program Committee member**, Ninth International Conference on Medical Image Computing and Computer Assisted Intervention, (MICCAI 2006).
2006 **Technical Program Committee member**, IEEE Computer Society Workshop on Mathematical Methods in Biomedical Image Analysis (MMBIA 2006) June 17-18, 2006, New York City, NY, USA
2006 **Technical Program Committee member**, Third International Workshop on Biomedical Image Registration (WBIR 2006) 9 - 11 July 2006, Utrecht, The Netherlands
2006 **Technical Program Committee member**, the seventh IEEE Southwest Symposium on Image Analysis and Interpretation 2006 (SSIAI'06).
2006 **Technical Program Committee member**, the 2nd International Workshop on Computer Vision Approaches to Medical Image Analysis (CVAMIA'06).
2006 **Paper Selection Committee member** and **Technical Program Committee member** for the 2006 IEEE International Symposium on Biomedical Imaging: From Nano to Macro (ISBI'06).
2006 **Technical Program Committee member**, IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR 2006), New York, NY: June 17-22, 2006, www.cvpr.org/2006
2005 **General Conference Chairman**, 19th International Conference on Information Processing in Medical Imaging, (IPMI 2005), Glenwood Springs, CO.
2005 **Reviewer**, Eighth International Conference on Medical Image Computing and Computer Assisted Intervention, (MICCAI 2005).
3/7/05 **Study Section Member**, ZRG1 SBIB-Q 50R: PAR-03-106: Innovations in Biomedical Computational Science and Technology R21/R33.

- 2/3/05 **Study Section Member**, Special Emphasis Panel/Scientific Review Group
2005/05 NCI-E PCRB (Q3) meeting.
- 2004 **Reviewer**, Seventh International Conference on Medical Image Computing and
Computer Assisted Intervention, MICCAI 2004.
- 2004 **Committee Member**, Computer Vision Approaches to Medical Image Analysis
(CVAMIA) and Mathematical Methods in Biomedical Image Analysis (MMBIA)
Workshop 2004.
- 2004 **Technical Conference Chairman**, 2nd IEEE International Symposium on
Biomedical Imaging, ISBI 2004, Washington D.C.
- 2004 **Committee Member**, 17th International Conference on Pattern Recognition,
ICPR 2004, Cambridge, United Kingdom.
- 2004 **Committee Member**, CARS 2004 Computer Assisted Radiology and Surgery,
Chicago, IL.
- 2004 **Committee Member**, 2004 Southwest Symposium on Image Analysis and
Interpretation, SSIAI 2004, Lake Tahoe, NV.
- 2003 **Committee Member**, 18th International Conference on Information Processing
in Medical Imaging, IPMI 2003, Ambleside, England.
- 2003 **Committee Member**, The Second International Workshop on Biomedical
Image Registration, WBIR 2003, Philadelphia, Pennsylvania.
- 2003 **Committee Member**, 17th International Congress and Exhibition Computer
Assisted Radiology and Surgery CARS 2003, London, England.
- 2002 **Session Chair**, Fifth International Conference on Medical Image Computing
and Computer Assisted Intervention MICCAI 2002, Tokyo, Japan.
- 2002 **Committee Member**, The Fifth Southwest Symposium on Image Analysis and
Interpretation SSIAI 2002, Santa Fe, NM.
- 2002 **Committee Member**, International Symposium on Cardiovascular Imaging,
Computer Assisted Radiology and Surgery, CARS 2002, Berlin, Germany.
- 2002 **Committee Member and Session Chair**, The First IEEE International
Symposium on Biomedical Imaging, ISBI 2002, Washington DC.
- 2001 **Committee Member**, 17th International Conference on Information Processing
in Medical Imaging, IPMI 2001, Davis, CA.
- 2001 **Committee Member**, Workshop on Mathematical Methods in Biomedical
Image Analysis, MMBIA 2001, Kauai, HA.
- 2000 **Committee Member**, 3rd IEEE Workshop on Mathematical Methods in
Biomedical Image Analysis, MMBIA 2000, Hilton Head Island, South Carolina.
- 2000 **Committee Member**, IEEE Southwest Symposium on Image Analysis and
Interpretation, SSIAI 2000, Austin, Texas.
- 1999 **Committee Member**, International Workshop on Biomedical Image
Registration, WBIR 1999, Ljubljana, Slovenia.
- 1998 **Committee Member**, Symposium on Cardiovascular Imaging, Iowa City, IA.

4.5 Student Related

4.5.1 Advisor to Student Groups

Faculty Advisor for the Team UI-ECE 2007 RoboCup virtual robots competition.
Students: Zaid Towfic (ECE senior), James Harris (ECE grad student) Jeff

McConnell (ECE sophomore), and Garrett Ejzak (ECE sophomore)

5. Teaching Activities

5.1 Courses Taught (exclude directed reading, individual investigations, thesis research)

Semester	Course Number	Course Title	Semester Hours	No. of Students	Remarks
S'97	57:008	Electrical Circuits	3	55	
F'97	55:146	Digital Signal Processing	3	15	
S'98	55:248	Adv. Digital Image Proc.	3	6	
S'98	55:074	Independent Study (ADIP)	3	1	
F'98	55:146	Digital Signal Processing	3	23+11	video conf.
F'98	55:191	ECE Graduate Seminar	0	37	
S'99	55:042	Signals and Systems	3	15	
S'99	55:091	ECE Professional Seminar	0	27	
S'99	55:191	ECE Graduate Seminar	0	35	
F'99	55:042	Signals and Systems	3	43	
S'00	55:248	Adv. Digital Image Proc.	3	13	
S'00	55:090	ECE Orientation Seminar	0	3	
F'00	57:008	Electrical Circuits	3	117	
F'00	55:042	Signals and Systems	3	27	
S'01	55:042	Signals and Systems	3	17	
F'01	57:012	Linear Systems	3	41	
F'01	55:042	Signals and Systems	3	24	
S'01	55:248	Adv. Digital Image Proc.	3	14	
F'02	57:008	Electrical Circuits	3	125	
F'02	55:091	ECE Professional Seminar	0	29	
S'03	55:042	Signals and Systems	3	24	
S'03	57:008	Electrical Circuits	3	76	
F'03	55:148	Digital Image Processing	3	11	Electronic classroom
F'03	55:191	ECE Graduate Seminar	0	38	
S'04	57:017	Computers in Engineering	3	63	
S'04	55:248	Advanced Image Processing	3	13	
Sum'04	57:017	Computers in Engineering	3	22	
F'04	57:017	Computers in Engineering	3	77	
F'04	55:040	Linear Systems I	3	17	
S'05		Developmental Leave			
F'05	57:017	Computers in Engineering	3	62	
F'05	55:148	Digital Image Processing	3	19	Electronic classroom
F'05	55:090	EE Orientation Seminar	0	31	
S'06	57:017	Computers in Engineering	3	72	
F'06	57:017	Computers in Engineering	3	42	Electronic

					classroom
F'06	55:148	Digital Image Processing	3	26	Electronic classroom
S'06	57:017	Computers in Engineering	3	64	Laptop classroom

5.2 Graduate Student Advising and Committees

5.2.a Ph.D. Dissertation Supervision

Hans Johnson, 6/97 – 5/02, Image Registration Methods for the Synthesis and Evaluation of Anatomical Population Summaries, **Ph.D. May 2002**. Information Technology Manager, Dept of Psychiatry, The University of Iowa.

Jianchun He, 6/99 – 8/03, Large Deformation Elastic Image Registration, **Ph.D. Aug 2003**. Research Assistant, Dept of Psychiatry, The University of Iowa.

Dinesh Kumar, 8/01 – present, Image Registration Methods for Constructing Probabilistic Lung Atlases.

Xiujuan Geng, 6/02 – present, Image Registration Methods for Statistical Comparison of Neurological Imagery.

Joo Hyun Song, 6/03 – present, Medical Image Registration for Modeling Lung Motion.

Kunlin Cao, 9/06 – present, Estimation of Regional Lung Mechanics using Image Registration.

5.2b MS Thesis Supervision

Ayananshu Banerjee, 1/95 - 6/96, High-Dimensional Anatomical Maps and their Applications in Empirical Estimation Functional Imaging and Neuromorphometry, **M.S. May 1996**, Co-supervised with M.I. Miller at Washington University, St. Louis.

Freddy B. So, 7/96 - 12/96, Deformable Modeling of Craniofacial Dysmorphology, **did not finish M.S. degree** because I left Washington University to come to The University of Iowa.

Peng Yin, 1/98 -12/99, Image Registration for Brachytherapy Treatment Planning in Radiotherapy of Cervical Cancer, **M.S. Dec 1999**, Design engineer, EMC Corp, Hopkinton, MA.

Francie McKee, 1/99 – 5/00, Measurement of Dysmorphic Infant Skull Shape Change due to Surgery and Growth Using Consistent Linear-Elastic Image Registration, **M.S. May 2000**.

Hans Johnson, 6/97-5/00, Method for Consistent Linear-Elastic Medical Image Registration, **M.S. May 2000**.

Blake Carlson, 6/99 – 5/01, Image Registration for Brachytherapy Treatment Planning in Radiotherapy of Cervical Cancer, **M.S. May 2001**. Software engineer, Etnus, Natick, MA.

John Dill, 6/00 – 5/02, Toolbox for Registration and Analysis, **M.S. May 2002**. Research Assistant, Dept of Psychiatry, The University of Iowa.

Dinesh Kumar, 8/01 – 8/03, Detection of Population Shape Differences Using Image Registration, **M.S. Aug. 2003**. Studying for PhD.

Rajesh Gangabathina, 7/02 – 12/03, Web-based Remote Processing System for Image Registration, **M.S. Dec 2003**. Software engineer. A2Z Inc, (<http://a2zshow.com>)
Joo Hyun Song, 6/03 – 12/05, 4D Tracking Lung Tissue in Limited View Multislice CT with Inverse Consistent Image Registration, **M.S. Dec 2005**. Studying for PhD.
Tom Idstein, 8/04 – present, Building a low-cost, moderate resolution device to measure the uptake and distribution in time and space of P.E.T. radio-pharmaceuticals. Co-advising with Richard Hichwa.
Jake Nickel, 1/07 – present, Electronic Atlas of the Rat Lung.

5.2c Ph.D. Committee Membership

Renuka Uppaluri, Automated Analysis of Pulmonary Parenchyma From CT Images, Ph.D. S'97, Thesis supervisor: Milan Sonka.
Weidong Liang, Automated Vessel Segmentation and Vessel Diameter Measurement in Brachial Ultrasound Time Series, Ph.D. S'98, Thesis supervisor: Milan Sonka.
Marek Brejl, Automated Initialization and Automated Design of Border Detection Criteria in Edge-based Image Segmentation, Ph.D. F'99, Thesis supervisor: Milan Sonka.
Roberto Lopez-Valcarce, Blind Equalization of Linear and Nonlinear Digital Communication Channels from Second Order Statistics, Ph.D. F'00, Thesis supervisor: Soura Dasgupta.
Jan Kybic, Ph.D., Elastic Image Registration Using Parametric Deformation Models, Sum'01, Swiss Federal Institute of Technology, Lausanne, Switzerland. **Served as Expert on Thesis committee**, Thesis supervisor: Michael Unser.
Qingyu Li, Blind Channel Identification and Equalization, Thesis supervisor: Er-Wai. Bai.
Juerg Tschirren, Thesis supervisor: Milan Sonka.
Steve Mitchell, 3D Active Appearance Models, Thesis supervisor: Milan Sonka
Ben Baojun Li, Thesis supervisor: Joe Reinhardt.
Mark Olszewski, Thesis supervisor: Milan Sonka
Fuxing Yang, Thesis supervisor: Milan Sonka
Xiangwei Zhang, Thesis supervisor: Milan Sonka
Honghai Zhang, Thesis supervisor: Milan Sonka
Fei Zhao, Thesis supervisor: Milan Sonka

5.3 Undergraduate Student Advising and Mentoring

Freddy B. So, 7/95 – 6/96, craniofacial archive recovery, Washington University.
Blake Carlson, 6/98 – 5/99, ATM high speed networking
Husam Abu-Zaydeh, 6/99 – 12/99, developed a user interface for deformable image software.
Luke Hirschy, 6/00 – 8/00, registered data sets for a collaborative project with Christian Barillot.
Joel Martin, 6/01 – 8/01, created and validated average brain data sets
Fred Collison, 8/01 – 5/02, Biomedical Engineering Senior Design project
John Gourley, 8/01 – 5/02, Biomedical Engineering Senior Design project
Michal Rysz, 1/02 – 5/02, Biomedical Engineering Senior Design project
Brent Owen, 10/03- 5/04, Biomedical Engineering Senior Design project
Sara Juvenal, 10/03- 5/04, Biomedical Engineering Senior Design project
Peiman Mohammadi, 10/03- 5/04, Biomedical Engineering Senior Design project

Jake Nickel, 1/06 – 12/07, Developing computer atlas of human and rat lung.
 David Simon, 1/06 – 5/06, RoboCup 2006, Honors project
 Nick Kiguta, 1/07 – present, Honors project & Developing computer atlas of human.

5.3a Undergraduate Student Project Supervision

Blake Carlson, High Performance ATM Networking and The Washington University Gigabit Switch, honors project, S'99.

5.3c Undergraduate Student Advising

Semester	Number of Advisees
S'97	27
F'97	14
S'98	12
F'98	16
S'99	15
F'99	19
S'00	19
F'00	10
S'01	15
F'01	12
S'02	14
F'02	21
S'03	24
F'03	23
S'04	
F'04	
S'05	Developmental Leave
F'05	18
S'06	20
F'06	18

5.5 Seminars and Short Courses

7/97, Milwaukee, WI, American Association of Physicists in Medicine (AAPM), “Electronic Anatomic Atlases for Medical Imaging,” conference tutorial, presented with Michael W. Vannier.

7/99, Nashville, TN, American Association of Physicists in Medicine (AAPM), “Advancements in Visualization,” conference symposium, one of four invited speakers.

5.10 Funded and Unfunded Course, Curriculum, Software, and Laboratory Development (listing of developmental efforts and innovations focused on improvement of instruction, including efforts to obtain external funding for laboratory and curricular development)

1. P.I. on grant entitled "ATM Distributed Medical Imaging." The goal of this grant is to connect the Medical School and College of Engineering together via high-speed ATM network for research purposes and to provide access to ATM technology for classroom instruction.
2. 12/06-1/07 Helped design and implement the 72 seat laptop classroom in 2229 SC. This classroom increased the number of student accessible computers in the College of Engineering by more than 50% (from 140 to 220). It provided a second electronic classroom in the college and made it possible to teach interactive lectures for courses with large class size.
3. 1/07-5/07 Taught the first course in the laptop classroom and developed interactive lectures for the course 57:017 Computers in Engineering

5.11 Other

(Attendance at teaching workshops; student comments of particular interest; etc.)

- 10/2/98 Together with Milan Sonka, organized a trip to the Mayo Clinic, Rochester, MN for 10 graduate students to give short presentations.
- 11/20/98 Together with Milan Sonka, organized a trip for 10 graduate students from the Mayo Clinic to give short presentations to the CEIG at the University of Iowa.
- 10/6/00 Together with Milan Sonka, organized a trip to the Mayo Clinic, Rochester, MN for 16 graduate students to give short presentations.

6. Research Activities

6.1 Active research fields at present (major fields only)

Computational Anatomy, Medical Imaging, Signal and Image Processing, Pattern Theory

6.2 Principal Investigator on contracts and/or grants (last five years)

Contract or Grant Title	Sponsor	Start and End Date	Budget	Acct. No.	Percent Credit
Quantitative Characterization of Congenital Skull Shape Deformity	The Whitaker Foundation	4/00 to 6/01	\$80,000	N/A	100%
Modeling Cranial Dymorphology and Its Correction Using Pattern Theory	The Whitaker Foundation	8/97 to 1/00	\$125,893	N/A	100%
ATM Distributed Medical Imaging	Washington University / NSF	11/98 to 11/01	\$80,000 equipment	N/A	100%
A High-Speed Network for Distributed Medical Imaging: Phase 1	The University of Iowa (Old Gold)	7/98	\$6000	N/A	100%
Image-Based Dose Planning in Intracavitary Brachytherapy (Image Registration Project Leader)	NIH	07/98 to 02/2002	\$165,423	R01 CA75371	100%
Lung Trajectory Mapping for IMRT (Subcontract PI)	NIH	4/03 to 3/07	\$47,082	R01 CA096679	100%

Information Processing in Medical Imaging 2005 Conference grant	The Whitaker Foundation	1/05 to 7/05	\$5,000	N/A	100%
Information Processing in Medical Imaging 2005 Conference grant	NIH	3/05 to 2/06	\$10,000	R13EB005133	100%
Information Processing in Medical Imaging 2005 Conference grant	Obermann Center	3/05	\$750	N/A	100%
Career Development Award	Obermann Center	1/05-5/05	\$500	N/A	100%
NIREP: Non-rigid Image Registration Evaluation Project	NIH/NIBIB	6/05 – 5/06	\$100,000	R21 EB004126	100%
NIREP: Non-rigid Image Registration Evaluation Project	NIH/NIBIB	6/06 – 5/09	\$212,500	R33 EB004126	100%
Image Registration for Image-Guided Adaptive Radiation Therapy (Williamson, PI, Christensen, subcontract PI),	NIH/NCI	4/07-3/12	\$61,281	P01 CA116602	100%

*Responsibility as a percentage of the grant budget

6.3 Participation (5 hours/week or more) in research contracts and/or grant

Contract or Grant Title	Sponsor	Start and End Date	Budget	Acct. No.	Percent Credit
Normal MR Neuromorphometry by Global Pattern Matching (Vannier PI)	NIH/NIDS	4/96 to 3/2001	\$1,510,332	R01 NS35368	15%
Spiral CT for Cochlear Implantation Research Plan (Wang, G., PI)	NIH	4/99 to 3/2004	\$685,480	R01 DC03590	8%
A Collaborative Educational Environment for Functional Cardiovascular Image Analysis (Chandran, PI)	The Whitaker Foundation	1/97 to 11/98	\$308,517	N/A	4%
Image and Model Based Analysis of Lung Disease (Hoffman, PI)	NIH	12/99 to 6/10	\$1,993,762	R01 HL64368	5%
3D Imaging & Computer Model of the Respiratory Tract (Corley, PI, Hoffman, Subcontract PI)	NIH/NHLBI	9/04 to 8/09	\$32,035	R01HL073598	50%
Regional Lung Mechanics by 3D Image Registration (Reinhardt, PI)	NIH/NHLBI	4/06 to 3/011	\$326,783	R01 HL079406	10%
Quantitative CT-Based Lung Atlas of the Mouse (Hoffman)	NIH/NHLBI	7/06 to 6/11	\$456,804	R01 HL080285	10%

Invited Presentations:

1. **Christensen, G.E.**, Rabbit, R.D., Miller, M.I. A deformable neuroanatomy textbook based on viscous fluid mechanics. 1993 Conference on Information Sciences and Systems, Johns Hopkins University, March, 1993. Invited by Clem Karl.
2. **Christensen, G.E.**, Miller, M.I. Deformations of Anatomical Shape. 1994 SIAM Annual Meeting, San Diego, California, July, 1994. Invited by Yali Amit.
3. **Christensen, G.E.**, Miller, M.I. Theory Institute on Large-Scale Medical Imaging, Argonne National Laboratories, August, 1995. Invited by Man Kam Kwong.

4. **Christensen, G.E.**, Image Registration via Global Shape Models. Approaches to Symbolic Representations of Brain Structures, Workshop at the Max-Planck Institute of Cognitive Neuroscience, Leipzig, Germany, December, 1997. Invited by Frithjof Kruggel.
5. **Christensen, G.E.**, Synthesizing Average Brain Shape and Validation, Institute for Pure and Applied Mathematics Workshop on Mathematics and Modeling in Brain Mapping, UCLA, May 2001. Invited by Paul Thompson and Arthur Toga.
6. **Christensen, G.E.**, Consistent Landmark and Intensity Based Image Registration, Swiss Federal Institute of Technology, Lansanne, Switzerland, June 2001. Invited by Michael Unser.
7. **Christensen, G.E.**, Minimizing Sources of Errors in Medical Image Registration, First IEEE International Symposium on Biomedical Imaging. Washington DC. July, 2002, Invited by Christos Davatzikos.
8. **Christensen, G.E.**, Medical Image Registration, Fifth International Conference on Medical Image Computing and Computer Assisted Intervention. Tokyo, Japan. September 2002, Invited by Paul Thompson.
9. **Christensen, G.E.**, Virginia Common Wealth University, Richmond Virginia, November 2002. Invited by Jeff Williamson.
10. **Christensen, G.E.**, MIT Martinos talk. Martinos Center for Biomedical Imaging, MGH-NMR and MIT, Boston, May 2003. Invited by Bruce Fischl.
11. **Christensen, G.E.**, 2004 IEEE International Symposium on Biomedical Imaging From Nano to Macro, Arlington, Virginia, April 2004. Invited by Paul Thompson.
12. **Christensen, G.E.**, Computer Vision Approaches to Medical Image Analysis (CVAMIA) and Mathematical Methods in Biomedical Image Analysis (MMBIA) Workshop, Prague, Czech Republic, May 2004. Invited by Milan Sonka.
13. **Christensen, G.E.**, Building an anatomical atlas. Pacific Northwest National Laboratories BRP meeting 6/1/05. Invited by Richard Corley.
14. **Christensen, G.E.**, Transitive and Inverse-Consistent Image Registration at AAPM regional meeting held at The University of Iowa, 11/2/05. Invited by John Bayouth.
15. **Christensen, G.E.**, Craniofacial Image Analysis for Biology, Clinical Genetics, Diagnostics and Treatment, October 6, 2006 in Copenhagen, Denmark. Invited by Tron Darvann.
16. **Christensen, G.E.**, Introduction to the Non-Rigid Image Registration Evaluation Project (NIREP), SPIE Workshop "Validation in medical image registration", February 18, 2007. Invited by Pierre Jannin.
17. **Christensen, G.E.**, Topics in Medical Image Registration, Center for Imaging Science, February 27, 2007, Johns Hopkins University, MD. Invited by Laurent Younes.

Presentations:

1. **Christensen, G.E.**, Miller, M.I., Amit, Y., Grenander, U. Global shape models for anatomical structures. 26th Conference on Information Sciences and Systems, Princeton University, March 1992.

2. **Christensen, G.E.**, Miller, M.I. Deformable Anatomical Data Bases for MR, PET, and CT. Midwest Workshop in Iterative Image Reconstruction, University of Minnesota, VA Medical Center, September, 1992.
3. **Christensen, G.E.**, Miller, M.I. A Deformable Neuroanatomy Textbook. 1992 Visualization in Biomedical Computing Conference, University of North Carolina, Chapel Hill, October, 1992. Computer demonstration.
4. **Christensen, G.E.**, Miller, M.I., Vannier, M.W. A 3D deformable magnetic resonance textbook based on elasticity. 1994 Spring Symposium: Applications of Computer Vision in medical Image Processing, Stanford University, March, 1994.
5. Miller, M.I., **Christensen, G.E.** Brain Mapping Today, and into the Future ..., 1994 Midwest Workshop in Iterative Image Reconstruction, Washington University, St. Louis, MO, June, 1994.
6. **Christensen, G.E.** Individualized electronic craniofacial textbooks. The annual meeting of the American Cleft Palate-Craniofacial Association, Tampa, Florida, April 1995.
7. **Christensen, G.E.**, Rabbit, R.D., Miller, M.I., Joshi, S.C., Grenander, U., Coogan, T., Van Essen, D.C. Topological properties of smooth anatomic maps. Proceedings of the 16th International Conference on Information Processing in Medical Imaging, Brest, France, June, 1995.
8. **Christensen, G.E.**, Miller, M.I., Marsh, J.L., Vannier, M.W. Automatic Analysis of Medical Images Using a Deformable Textbook. 1995 Computer Aided Radiology Conference, Berlin, Germany, June, 1995.
9. **Christensen, G.E.** A Deformable Atlas for Modeling Craniofacial Deformities. Workshop: Pattern-Theoretic Knowledge Representation, St. Louis, MO, April 18-19, 1996.
10. **Christensen, G.E.**, Kane, A.A., Marsh, J.L., and Vannier, M.W. Synthesis of an Individualized Cranial Atlas with Dymorphic Shape. Mathematical Methods in Biomedical Image Analysis, San Francisco, CA, June, 1996.
11. **Christensen, G.E.**, Kane, A.A., Marsh, J.L., and Vannier, M.W. A 3D Deformable Infant CT Atlas, CAR '96: Computer Assisted Radiology, Paris, France, June, 1996.
12. **Christensen, G.E.**, Williamson, J.F., Chao, K.S.C., Miller, M.I., So, F.B., and Vannier, M.W. Deformable Anatomical Templates for Brachytherapy Treatment Planning in Radiotherapy of Cervical Cancer, SPIE's 42nd Annual Meeting, Vision Geometry VI, San Diego, CA, July, 1997.
13. Vannier, M.W., **Christensen, G.E.**, Electronic Anatomic Atlases for Medical Imaging, American Association of Physicists in Medicine (AAPM) Annual Meeting, Milwaukee, WI, July 1997.
14. Johnson, H.J., **Christensen, G.E.**, Haller, J.W., Melloy, J. and Vannier, M.W. Synthesizing Average 3D Anatomical Shapes, Biomedical Engineering Seminar, Mayo Clinic, Rochester, MN, Oct. 1998.
15. **Christensen, G.E.**, Johnson, H.J., Haller, J.W., Melloy, J., Vannier, M.W., Marsh, J.L., Synthesizing average 3D anatomical shapes using deformable templates, Medical Imaging 1999: Image Processing, San Diego, CA, Feb. 1999.

16. Vannier, M.W., **Christensen, G.E.**, Rob, R., Napel, S., Advancements in Visualization, American Association of Physicists in Medicine (AAPM) Annual Meeting, Nashville, TN, July 1999.
17. **Christensen, G.E.**, Consistent Image Registration, Workshop to honor Donald L. Snyder, Sachs Professor of Electrical Engineering, Washington University, St. Louis, MO, Jan. 2000.
18. **Christensen, G.E.**, Yin, P. Vannier, M.W., Chao, K.S.C., Dempsey, J.F., Williamson, J.F. Large-Deformation Image Registration using Fluid Landmarks, IEEE Southwest Symposium on Image, Austin, Texas, April 2000.
19. **Christensen, G.E.**, He, J., Consistent Nonlinear Elastic Image Registration, IEEE Proceedings of Mathematical Methods in Biomedical Image Analysis, Kauai, Hawaii. Dec. 2001.
20. **Christensen, G.E.**, He, J., Large Deformation Inverse Consistent Elastic Image Registration, Information Processing in Medical Imaging, Ambleside, United Kingdom, July 2003.
21. **Christensen, G.E.**, Inverse Consistent Medical Image Registration, Dept. of Electrical Engineering, The University of Southern California, Jan. 2005.

6.4 Other important facts or information

(Research proposals submitted, new research programs under development, seminars presented, etc.)

1. 1R01RR15228-01 grant submission: Population Analysis via Consistent Image Registration, **G.E. Christensen (PI)**, October 1999, priority score 221 and a percentile of 32.3. Not funded.
2. 1R01DE14162-01 grant resubmission: Morphometric Analysis via Consistent Image Registration, **G.E. Christensen (PI)**, July 2000, priority score 238 and a percentile of 43.1. Not funded.
3. R01CA75371-05 grant resubmission: Image-based Dose Planning in Intracavitary Brachytherapy, **G.E. Christensen (subcontract PI)**, Sponsoring Agency: Washington University, July 2001, priority score 242 and a percentile of 47. Not funded.

7. Publications

7.1 Books and monographs. (Limit to textbooks, research monographs, conference/symposium/congress proceedings, handbooks, etc., of which you are an author or an editor. Do not include articles or chapters in such media.)

Conference Proceedings:

1. Leahy, R.M., Roux, C., **Christensen, G.E.**, Wilson, D.L. eds., Proceedings of the 2004 IEEE International Symposium on Biomedical Imaging: From Nano to Macro, Arlington, VA, USA, April 15-18, 2004, IEEE, CDROM.

2. **Christensen, G.E.**, Sonka, S. eds. Information Processing in Medical Imaging: 19th International Conference, IPMI 2005, Glenwood Springs, CO, USA, July 10-15, 2005, Proceedings, Springer, Lecture Notes in Computer Science, LNCS 3565, 777 pages.

7.2 Articles in technical journals with rigorous review procedures. (Include notes, discussions, letters to editor, etc., which are published in such journals and those articles or chapters in a meeting's printed record if that record utilizes review procedures equivalent to those for archive journals.)

Journal Papers:

3. Miller, M.I., **Christensen, G.E.**, Amit, Y., and Grenander, U. Mathematical textbook of deformable neuroanatomies. Proceedings of the National Academy of Sciences, December 1993, 90(24), pp. 11944-11948.
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6. Haller, J.W., **Christensen, G.E.**, Joshi, S.C., Newcomer, J.W., Miller, M.I., Csernansky, J.G., Vannier, M.W. Hippocampal MR Morphometry by Pattern Matching. Radiology, 1996, (199) pp. 787-791.
7. **Christensen, G.E.**, Rabbit, R.D., Miller, M.I. Deformable Templates Using Large Deformation Kinematics. IEEE Transactions on Image Processing, 5(10), 1996, pp. 1435-1447.
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10. Haller, J.W., Banerjee, A., **Christensen, G.E.**, Gado, M., Joshi, S.C., Miller, M.I., Sheline, Y., Vannier, M.W., Csernansky, J.G. 3D Hippocampal Morphometry by High Dimensional Transformation of a Neuroanatomical Atlas. Radiology, 202(2), 1997, pp. 504-510.
11. Kane, A.A., Lo, L.J., **Christensen, G.E.**, Vannier, M.W., Marsh, J.L. Relationship between Bone and Muscles of Mastication in Hemifacial Microsomia. Plastic and Reconstructive Surgery, 99, April, 1997, pp. 990-999.
12. Miller, M.I., Banerjee, A., **Christensen, G.E.**, Joshi, S.C., Khaneja, N., Grenander, U., and Matejic, L. Statistical Methods in Computational Anatomy. Statistical Methods in Medical Research, vol. 6, 1997, pp. 267-299.
13. **Christensen, G.E.**, Joshi, S.C., and Miller, M.I. Volumetric Transformation of Brain Anatomy. IEEE Transactions on Medical Imaging. 16(6), Dec. 1997, pp. 864-877.

14. **Christensen, G.E.**, MIMD vs. SIMD Parallel Processing: A Case Study in 3D Medical Image Registration. *Parallel Computing*. Vol. 24, 1998, pp. 1369-1383.
15. **Christensen, G.E.**, Johnson, H.J., Consistent Image Registration, *IEEE Transactions on Medical Imaging*. 20(7), July 2001, pp. 568-582.
16. **Christensen, G.E.**, Carlson, B., Chao K.S.C., Yin, P., Grigsby, P.W., Nguyen, K., Dempsey, J.F., Lerma, F.A., Bae, K.T., Vannier, M.W., Williamson, J.F., Image-Based Dose Planning of Intracavitary Brachytherapy: Registration of Serial Imaging Studies using Deformable Anatomic Templates, *International Journal of Radiation, Oncology, Biology, and Physics*. 51(1), 2001, pp. 227-243.
17. Perlyn, C.A., Marsh, J.L., Vannier, M.W., Kane, A.A., Koppel, P. Clark, K.W., **Christensen, G.E.**, Knapp, R., Lo L.J., Govier, D. The Craniofacial Anomalies Archive at St. Louis Children's Hospital: 20 years of Craniofacial Imaging Experience. *Plastic and Reconstructive Surgery*. 108(7), 2001, pp. 1862-1870.
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27. BA. Simon, **GE Christensen**, DA. Low, JM. Reinhardt, CT Studies of Lung Mechanics, Proc Am Thorac Soc, 2, 2005, pp. 506-507, 517-521.
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29. Li, B, **Christensen, GE**, Hoffman, EA, McLennan, G, Reinhardt, JM, The Construction of a Normative Human Lung Atlas by Inter-Subject Registration of CT Images submitted to IEEE Transactions on Medical Imaging.
30. Ryken TC, Owen BD, **Christensen GE**, Reinhardt JM, Rapid prototype patient specific drill-template for cervical pedicle screw placement. Accepted for publication 1/17/2007 in Computer Assisted Surgery.
31. **Christensen, GE**, Song, JH, Lu, W, El Naqa, I, Low, DA, Tracking Lung Motion with Inverse Consistent Image Registration. Tentatively accepted 11/14/2006 for publication in Medical Physics.
32. Kumar, D., **Christensen, GE**, Geng, X., Hoffman, EA, BICIR: Boundary-Constrained Inverse Consistent Image Registration Using WEB-Splines. Submitted to IEEE Transactions on Medical Imaging 10/8/2006.

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1. **Christensen, G.E.**, Rabbit, R.D., Miller, M.I., Joshi, S.C., Grenander, U., Coogan, T., Van Essen, D.C. Topological properties of smooth anatomic maps. In Bizais, Braillet, and Di Paola, editors, Information Processing in Medical Imaging, Kluwer Academic Publishers, Boston, 1995, (3) pp. 101-112.
2. **Christensen, G.E.**, Kane, A.A., Marsh, J.L., and Vannier, M.W. Synthesis of an Individualized Cranial Atlas with Dysmorphic Shape. IEEE Proceedings of Mathematical Methods in Biomedical Image Analysis, June 1996, pp. 309-318.
3. Joshi, S.C., Banerjee, A., **Christensen, G.E.**, Csernansky, J.G., Haller, J.W., Miller, M.I., and Wang, L. Gaussian Random Fields on Sub-Manifolds for Characterizing Brain Surfaces. In Duncan and Gindi, editors, Information Processing in Medical Imaging, Lecture Notes in Computer Science, vol. 1230, Springer, New York, 1997, pp. 381-386.
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7. Geng, X., Kumar, D., **Christensen, G.E.**, Vannier, M.W., Inverse Consistent Image Registration of MR Brain Scans: Handedness in Normal Adult Males, In Maintz and Gee, editors, Proceedings of the 2nd International Workshop on Biomedical Image Registration, June 2003, LCNS 2717, Springer-Verlag, Berlin, pp. 71-80.

8. Kumar, D., Geng, X., **Christensen, G.E.**, Vannier, M.W., Characterizing Shape Differences Between Phantom Image Populations Via Multivariate Statistical Analysis of Inverse Consistent Transformations, In Maintz and Gee, editors, Proceedings of the 2nd International Workshop on Biomedical Image Registration, June 2003, LCNS 2717, Springer-Verlag, Berlin, pp. 367-376.
9. He, J., **Christensen, G.E.**, Large Deformation Inverse Consistent Elastic Image Registration, In Taylor and Noble, editors, Information Processing in Medical Imaging, Lecture Notes in Computer Science, July 2003, pp. 438-449.
10. Geng X, Kumar D, **Christensen GE**, Transitive Inverse-Consistent Manifold Registration, 19th International Conference on Information Processing in Medical Imaging, IPMI 2005, July 11 –15 2006, Glenwood Springs, CO. pp. 468-479.
11. Kumar D, Geng X, Hoffman EA **Christensen GE**, BICIR: Boundary-Constrained Inverse Consistent Image Registration Using WEB-Splines, Mathematical Methods in Biomedical Image Analysis, June 17-18, 2006 New York City, NY.
12. Reinhardt, J.M., **Christensen, G.E.**, Hoffman, E.A., Ding, K, Cao, K., Registration-derived estimates of local lung expansion as surrogates for regional ventilation, Submitted to Information Processing in Medical Imaging 2007.

7.3 Articles, chapters, abstracts, and summaries in research monographs, conference/symposium/congress proceedings, handbooks, etc. (Generally most articles published in the cited media. Also papers printed by a society as a preprint/reprint and not published in any other form.)

Conference Papers and Book Chapters:

1. Morely, R.E., **Christensen, G.E.**, Sullivan, T.J., and Kamin, O. The design of a bit-serial coprocessor to perform multiplication and division on a massively parallel architecture. *Frontiers of Massively Parallel Computation*, IEEE Computer Society Press, Washington, October 1988, pp. 419-422.
2. Morely, R.E., **Christensen, G.E.**, Sullivan, T.J., The design of a bit-serial coprocessor to perform multiplication and division on a massively parallel architecture. *Systolic Array Processors*, Prentice Hall, New York, 1989, pp. 497-503.
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10. Joshi, S.C., Miller, M.I., **Christensen, G.E.**, Coogan, T., and Grenander, U. The generalized Dirichlet problem for mapping brain manifolds. *Vision Geometry IV*, Proceedings of SPIE 2573, Eds. Melter, Wu, Bookstein, and Green, July, 1995, pp. 278-289.
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13. Marsh, J.L., Kane, A.A., Lo, L.J., **Christensen, G.E.**, Vannier, M.W., Craniofacial Imaging: The relationship between soft and hard tissues in hemifacial microsomia. Proceedings of the 6th International Congress of Craniofacial Surgery, Saint Tropez, French Riviera, October 21-24, 1995.
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37. Ryken, TC, Owen, BD, Reinhardt, JM; **Christensen, GE**, Rapid Prototype Patient-Specific Drill Templates for Cervical Pedicle Screw Placement, 2006 AANS Annual Meeting, April 22-27, 2006 San Francisco, CA
38. de Ryk, J., Weydert, J., **Christensen, GE**, Thiesse, J., Namati, E, Reinhardt, JM, Hoffman, EA, McLennan, G., Three dimensional histopathology of lung cancer with multimodality image registration. Medical Imaging 2007: Proc. of SPIE.
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Abstracts:

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2. **Christensen, G.E.**, Individualized Electronic Craniofacial Textbooks, The 52nd Annual Meeting of American Cleft Palate-Craniofacial Association, April, 1995. Abstract.
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10. **Christensen, G.E.** and Marsh, J.L., Computer Simulation of "Normalcy" in Craniosynostosis, Abstract, American Association of Plastic Surgeons, 1997 Annual Meeting, Atlantic Beach, FL, May, 1997. Abstract.
11. Williamson, J.F., **Christensen, G.E.**, Chao, C.K.S., Miller, M.I., So, F.B., and Vannier, M.I., A Novel Method for Registration of 3D CT Images with and without Intracavitary Applicators for Definitive Radiotherapy of Cervix Carcinoma. 9th Annual Meeting of American Brachytherapy Society, Palm Beach, FL, May, 1997. Abstract.
12. Bucholz, R.D., Levy, A.L., **Christensen, G.E.**, Frank, K.J., Hammoud, A., Henderson, J.M., Joshi, S.C., McDurmont, L.L., Mark, K.E., Miller, M.I., Schaewe, T.J., Smith, K.R. and Sturm, C.D., An Internet-Connected, Patient-Specific, Deformable Brain Atlas Integrated into a Surgical Navigation System, ICNS 97, 1997. Abstract.
13. Vannier, M.W. and **Christensen, G.E.**, Electronic Anatomic Atlases for Medical Imaging, Short Course, American Association of Physicists in Medicine, 39th Annual Meeting and Exhibition, Milwaukee, WI, July, 1997. Abstract.

14. **Christensen, G.E.**, Modeling of Cranial Dysmorphology and Its Correction by Global Pattern Matching, Abstract, The Whitaker Foundation Biomedical Engineering Research Grants Conference, Snowbird, UT, July, 1997. Abstract.
15. **Christensen, G.E.**, Modeling Cranial Dysmorphology and Its Correction Using Pattern Theory, The Whitaker Foundation Annual Meeting, San Diego, CA, Aug. 1999. Abstract.
16. Kaczka, DW, Kumar, D, **Christensen, GE**, Massa, CB, Simon, BA, Assessment of Regional Mechanics in Acute Lung Injury using 3D Image Registration, In American Thoracic Society International Conference, ATS 2006, San Diego, May 19-24, 2006. Abstract.
17. Lu, W, Song, JH, **Christensen, GE**, Parikh, PJ, Zhao, T, Hubenschmidt, JP, Bradley, JD, Low, DA. Evaluating Lung Motion Variations In Repeated 4D CT Studies Using Inverse Consistent Image Registration, 48th Annual meeting of the American Society for Therapeutic Radiology and Oncology (ASTRO) Nove 5-9, 2006, Philadelphia, Pennsylvania Abstract. Submitted.

7.4 Articles published in popular journals or journals with moderate review procedures or presented at a meeting and for which the society or organization does not provide a permanent printed version of article.

7.4.1 Posters

1. **Christensen, G.E.**, Rabbit, R.D., Miller, M.I. 3D brain mapping using a deformable neuroanatomy. 1993 International Meeting on Fully Three-Dimensional Image Reconstruction, Snowbird, Utah, June 1993. Poster.
2. Haller, J.W., **Christensen, G.E.**, Joshi, S., Miller, M.I., Gado, M., Csernansky, J., and Vannier, M.W. MRI segmentation using high dimensional transformations of a digital atlas. American College of Neuropsychopharmacology (ACNP) Conference, Dec 11-16, 1994. San Juan, Puerto Rico. Poster.
3. Haller, J.W., **Christensen, G.E.**, Joshi, S.C., Gado, M., and Vannier, M.W. Precision and accuracy of a high dimensional transformation and segmentation of MR images of the hippocampus. Proceedings of the 16th International Conference on Information Processing in Medical Imaging, Brest, France, June 26-30, 1995. Poster.
4. **Christensen, G.E.**, Kane, A.A., Marsh, J.L., and Vannier, M.W. Individualized Electronic Atlases for Dysmorphic Craniofacial Shape Analysis. 41st Plastic Surgery Research Council Annual Meeting, St. Louis, MO, June 1-4, 1996. Poster.
5. Kane, A.A., Eaton, A., **Christensen, G.E.**, Marsh, J.L., Vannier, M.W., Kreiberg, S., Zonneveld, F.W. Qualification of Midface Dysmorphology in Untreated Unicoronal Synostosis. 41st Plastic Surgery Research Council Annual Meeting, St. Louis, MO, June 1-4, 1996. Poster.
6. Haller, J.W., Banerjee, A., **Christensen, G.E.**, Snyder, A.Z., Miller, M.I., and Raichle, M.E. High Dimensional Transformation of PET and MRI to Atlas Space. 2nd International

Conference on Functional Mapping of the Human Brain, Boston, MA, June 17-21, 1996. Poster.

7. **Christensen, G.E.**, Joshi, S.C., and Miller, M.I. Individualizing Anatomical Atlases of the Head, Proceedings of the 4th International Conference on Visualization in Biomedical Computing, Hamburg, Germany, Sept 22-25, 1996. Poster.
8. Joshi, S.C., Banerjee, A., **Christensen, G.E.**, Csernansky, J.G., Haller, J.W., Miller, M.I., and Wang, L. Gaussian Random Fields on Sub-Manifolds for Characterizing Brain Surfaces. In Duncan and Gindi, editors, Information Processing in Medical Imaging, Poultney, VT, June 1997. Poster.
9. Kane, A.A., Eaton, A., **Christensen, G.E.**, Vannier, M.W., Kreiberg, S., Zonneveld, F.W. and Marsh, J.L. Qualification of Midface Dymorphology in Untreated Unicoronal Synostosis, Plastic Surgery Research Council, New Orleans, LA, June 1996. Poster.
10. Johnson, H.J, **Christensen, G.E.**, Haller, J.W., Melloy, J., and Vannier, M.W. Synthesizing Average 3D Anatomical Shapes. Symposium on Cardiovascular Imaging, Iowa City, IA, Sept. 1998. Poster.
11. **Christensen, G.E.**, Modeling Cranial Dymorphology and Its Correction Using Pattern Theory, The Whitaker Foundation Annual Meeting, San Diego, CA, Aug. 1999. Poster.
12. He, J., **Christensen, G.E.**, Rubinstein, J.T., Wang, G. A New Method for Consistent Nonlinear Image Registration, Medical Imaging 2002: Image Processing, San Diego, CA, Feb. 2002. Poster.
13. Kumar, D, Geng, X, **Christensen, GE**, Vannier, MW, Characterizing Shape Differences Between Phantom Image Populations Via Multivariate Statistical Analysis of Inverse Consistent Transformations, 2nd International Workshop on Biomedical Image Registration, Philadelphia, PA, June 2003, Poster.
14. Lu, W, Parikh, P, Hubenschmidt, J, Nystrom, M, **Christensen, GE**, Song, J, Bradley, J, Low, D, A 4D CT process using respiratory amplitude sorting and consistent image registration, Biomedical Research Opportunities Workshop IV, February 24 - 25, 2006 at the Bethesda North Marriott Hotel & Conference Center. Poster
15. de Ryk, J., Weydert, J., **Christensen, GE**, Thiesse, J., Namati, E, Reinhardt, JM, Hoffman, EA, McLennan, G., Three dimensional histopathology of lung cancer with multimodality image registration. Medical Imaging 2007: Proc. of SPIE. Poster.

7.5 Other Technical publications (book and paper reviews, reports, theses, and dissertations).

1. **Christensen, G.E.** The design of a bit-serial coprocessor to perform multiplication and division on a massively parallel architecture. Electrical Engineering Masters Thesis, Washington University, St. Louis, December 1989.
2. **Christensen, G.E.** Deformable shape models for anatomy. Electrical Engineering D.Sc. Dissertation, Washington University, St. Louis, Missouri, August 1994.
3. **Christensen G.E.**, Joshi, S.C., Wang, J. and Miller, M.I. Deformable Brains. April 1994. Videotape.

4. **Christensen, G.E.**, Haller, J.W., and Walkup, R. Pathophysiology of Schizophrenia, February 1995. Videotape.

7.6 Journal, publishers and research supporting agencies for whom you have reviewed papers, books or proposals in the past three years.

IEEE Transactions on Medical Imaging, IEEE Transactions on Image Processing, Medical Image Analysis, Pattern Recognition Letters, Radiology, The Whitaker Foundation, Applied Mathematics Letters, Visualization in Biomedical Computing Conference 1996, IEEE Computer, National Science Foundation, National Institute of Health, The University of Iowa Biosciences Initiative Pilot Grant Program, The University of Iowa Carver Scientific Research Initiative Grant Program, Medical Physics, Oxford University Press, IEEE Transactions on Pattern Analysis and Machine Intelligence, Computer Vision and Image Understanding, International Workshop on Biomedical Image Registration.

7.7 Patents

1. Miller, M.I., **Christensen, G.E.**, Joshi, S.C., Grenander, U., Method and Apparatus for Image Registration, United States, patent number **6,009,212**. Issued 12/28/99.
2. Miller, M.I., Joshi, S.C., **Christensen, G.E.** Rapid Convolution Based Large Deformation Image Matching Via Landmark and Volume Imagery. United States, patent number **6,226,418**. Issued 5/1/01.
3. Miller, M.I., Joshi, S.C., **Christensen, G.E.** Rapid Convolution Based Large Deformation Image Matching Via Landmark and Volume Imagery. United States, patent number **6,408,107**. Issued 6/18/02.
4. **Christensen, G.E.** Method and Apparatus for Generating Consistent Image Registration. United States, patent number **6,611,615**. Issued 8/26/03.