

**Christopher F. Beaulieu, M.D., Ph.D.**  
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## Identifying Data

Date of Birth: A while ago

Citizenship Status: United States

California License: G078532

## Education

### I. Colleges and Universities Attended

1978-1980	Shoreline Community College, Seattle, WA
1980-1982	University of Washington, Seattle, WA, B.S., Chemistry
1982-1989	University of Washington School of Medicine, M.D.
1984-1989	University of Washington School of Medicine, Ph.D., Biological Structure

### II. Scholarships and Academic Honors (Excludes Post-Degree Awards)

1980-1982	University of Washington Honors Undergraduate Program
1982	Cum Laude, Chemistry Honors Program
1983	Medical Student Research Training Program Fellowship
1983	Medical Scientist Training Program (M.D.-Ph.D.) Scholarship
1985-1987	C.M. Poncin Medical Research Award
1985, 1987	Society of Magnetic Resonance in Medicine Travel Award
1986	Biological Structure Chairman's Travel Award
1988	Alpha Omega Alpha Medical Honor Society
1989	Doctor of Medicine with High Honors (awarded to top 3 of 180)

### III. Postdoctoral Residency and Training

1989 - 1990	Transitional Intern, Virginia Mason Medical Center, Seattle, WA
1990 - 1994	Resident in Radiology, Duke Medical Center, Durham, NC
1994 - 1995	Fellow, Body Imaging, Stanford University Medical Center, Stanford, CA
7/95-8/95	Visiting Fellow, Skeletal Imaging, with Dr. Donald Resnick, University of California, San Diego, CA

**IV. Specialty Board Certification**

1989 National Board of Medical Examiners  
1994 American Board of Radiology

**Employment History**

**I. Academic Appointments**

7/95 – 12/95 Staff Physician, Department of Radiology, Abdominal Imaging and Musculoskeletal Imaging Sections, Stanford University Medical Center  
1/96 - 8/99 Assistant Professor of Radiology, Sections of Body Imaging and Musculoskeletal Imaging, Stanford University Medical Center  
9/99- 8/01 Assistant Professor of Radiology, Sections of Body Imaging and Musculoskeletal Imaging, Stanford University Medical Center  
11/00 - Present Associate Professor of Radiology, Stanford University Medical Center  
2/01- 3/18 Chief of Musculoskeletal Radiology  
6/06- Present Professor of Radiology  
1/2018 Associate Chair of Education, Stanford Radiology

**Public and Professional Service**

**I. Committees and Appointments**

1997 - 2001 Trauma QI Committee, Stanford Medical Center  
1997- 2014 Manuscript Reviewer, Clinical Journal of Sport Medicine  
1998 - 2000 Scientific Program Committee, International Society of Magnetic Resonance in Medicine  
1997- 1998 Retreat Planning Committee, Department of Radiology, Stanford Medical Center  
1999-2000 Course Organizer: Clinical Categorical Course on Musculoskeletal MR Imaging, International Society of Magnetic Resonance in Medicine  
1999 - 2014 Manuscript Reviewer, Radiology  
1999-2000 Program Director, Study Group on Musculoskeletal MR Imaging, International Society of Magnetic Resonance in Medicine  
2000 - 2002 Contributing Editor, Yearbook of Hand Surgery  
2000 - Present Fellow, Society of Computed Body Tomography and MR

## Christopher F. Beaulieu, M.D., Ph.D.

2001 - 2004	Executive Council, American Roentgen Ray Society
2004 - 2009	Membership Committee, Society Computed Body Tomography and MRI
2005 - 2010	Manuscript Reviewer, American Journal of Sports Medicine
2004 - 2007	Consulting Team Physician, San Francisco 49ers Football Club
2006 – 2007	Stanford Physician Leadership Development Course
2008 - 2021	Team Radiologist, San Francisco 49ers Football Club
2009 - 2019	Outpatient Musculoskeletal Imaging, Co-director with V. Van Dalsem

### Post-Degree Honors, Awards, Memberships

1993	<b>Chief Resident in Diagnostic Radiology, Duke University Medical Center</b>
1996	<b>Cum Laude Award, Society of Computed Body Tomography and MRI</b> <b>Beaulieu CF, Napel S, Ch'en IY, Daniel BD, Rubin GD, Jeffrey, RB: Optimization of CT parameters for Virtual Colonoscopy. Nineteenth Annual Course, March 19, 1996, Scottsdale, AZ.</b>
1996	<b>Picker AUR Faculty Development Award</b>
1997	<b>RSNA Scholars Award</b> Evaluation of Volume CT Data with Sliding Slab Volume Rendering: Applications to Three-Dimensional CT Colonography
1998	<b>Cum Laude Award, Society of Computed Body Tomography and MRI</b> <b>Beaulieu CF, Karadi CA, Jeffrey RB, Paik DS, and Napel S. Creation and detection of digital polyps in patient CT data: a better gold standard for evaluation of visualization modes in CT colonography. Twenty-first Annual Course, March 29, 1998, Rancho Mirage, CA.</b>
1999	<b>Cum Laude Award, Society of Computed Body Tomography and MRI</b> <b>Beaulieu CF, Karadi CA, Jeffrey RB Jr., Rubin GD, Fleischmann D, Napel S. Multidetector spiral CT Colonography: maintaining image quality with rapid acquisition. Twenty-second Annual Course, April 11, 1999, New Orleans, LA.</b>
2000	<b>Hounsfield Award, Society of Computed Body Tomography and MRI</b> <b>Beaulieu CF, Paik DS, Napel S, Yee J, Coulam C, Steinauer A, Betts B, Jeffrey RB. Computer-Aided Polyp Detection Improves Reading Efficiency in CT Colonography. Twenty-third Annual Course, April 11, 2000, San Diego, CA.</b>

Christopher F. Beaulieu, M.D., Ph.D.

- 2001                    **Lauterbur Award, Society of Computed Body Tomography and MRI**  
Gold GE, **Beaulieu CF**, Butts R, Scott GS, Pauly JM, Herfkens RJ. Dynamic MR imaging and therapy of glenohumeral instability. Society of Computed Body Tomography and Magnetic Resonance Annual Scientific Meeting. Miami, FL, April, 2001.
- 2002                    **Lauterbur Award, Society of Computed Body Tomography and MRI**  
Gold GE, Hargreaves B, Vasanawala S, Pauly JM, Herfkens RJ, and **Beaulieu CF**. Three Dimensional Steady-State Imaging of Articular Cartilage. Society of Computed Body Tomography and Magnetic Resonance 25th Annual Course Scientific Session, March 17, 2002, Charleston, SC. Winner of Lauterbur award for outstanding scientific paper.
- 2003                    **Lauterbur Award, Society of Computed Body Tomography and MRI**  
Gold GE, Hargreaves B, Vasanawala S, Pauly JM, Herfkens RJ, **Beaulieu CF**. Optimization of musculoskeletal MRI at 3.0 Tesla. Society of Computed Body Tomography and Magnetic Resonance 26th Annual Course Scientific Session.
- 2004                    **Cum Laude Award, Society of Computed Body Tomography and MRI**  
Gold GE, Hargreaves BA, Han E, Pauly JM, Wright G, Herfkens RJ, Brittain J, **Beaulieu CF**. Rapid measurement of articular cartilage physiology using MRI. In: Twenty-Seventh Annual Course Scientific Session, Society of Computed Body Tomography and Magnetic Resonance; Winner of Cum Laude award for outstanding paper. Henderson, NV, 2004.
- 2007                    **Cum Laude Award, Society of Computed Body Tomography and MRI**  
Gold GE, Busse RF, Stevens K, Han E, Brau AC, Beatty P, **Beaulieu CF**. Isotropic MRI with 3D-FSE-XETA (eXtended Echo Train Acquisition) In: Thirtieth Annual Course Scientific Session, Society of Computed Body Tomography and Magnetic Resonance; Winner of Cum Laude award for outstanding paper. Orlando, FL, March, 2007.
- 2018                    Chaudhari A, Sveinsson B, Wood J, Stevens K, **Beaulieu C**, Oei E.H., Rosenberg J, Kogan F, Alley M, Gold G, and Hargreaves B. *Comparison of Diagnostic Performances of Two Rapid Knee MRI Protocols for Comprehensive Whole-Joint Assessment: A Multi-Reader Feasibility Study*. Intl Soc Magn Reson Med, Paris, 2018. Magna Cum Laude Merit Award - International Society for Magnetic Resonance in Medicine 2018
- 2021                    Stanford Hospitals and Clinics Excellence in Teaching Award. March 25, 2021

## Scholarly Publications

### I. Peer-Reviewed Journal Articles

#### Published (117 Total)

1. **Beaulieu CF**, Liu S, Slutsky LJ, and White RD. Acoustic relaxation in aqueous protein solution. *IEEE Trans. Sonics and Ultrasonics*. p.785, 1982.
2. **Beaulieu CF**, Clark JI, Brown RD III, Spiller M, Koenig SH. Relaxometry of calf lens homogenates, including cross-relaxation by crystallin NH groups. *Magn. Reson. Med.* 8(1):45-57,1988.
3. **Beaulieu CF**, Brown RD III, Clark JI, Spiller M and Koenig SH. Relaxometry of calf lens homogenates II: Temperature dependence and comparison with other proteins. *Magn. Reson. Med.* 10(3):362-372, 1989.
4. Clark JI, **Beaulieu CF**. From E.M. microprobe analysis to NMRD studies of the lens. *Lens and Eye Toxicity Research.* 6(4):523-539, 1989.
5. **Beaulieu CF**, Clark JI. P-31 Nuclear magnetic resonance and laser spectroscopic analyses of lens transparency during calcium-induced opacification. *Invest. Ophthalmol. Vis. Sci.* 31(7), 1339-1347, 1990.
6. Koenig SH, **Beaulieu CF**, Brown RD III, Spiller M. Oligomerization and conformational change in solutions of calf lens gamma-II crystallin: results from 1/T1 nuclear magnetic resonance dispersion profiles. *Biophysical J.* 57(3):461-469, 1990.
7. **Beaulieu CF**, Zhou X, Cofer GP and Johnson GA. Diffusion-weighted MR microscopy with fast spin-echo. *Magn. Reson. Med.* 30(2):201-206, 1993.
8. Zhou X, Liang Z, Cofer GP, **Beaulieu CF**, Suddarth SA and Johnson GA. Reduction of ringing and blurring artifacts in fast spin-echo imaging. *JMRI* 3(5): 803-807, 1993.
9. Rubin GD, **Beaulieu CF**, Argiro V, Ringl H, Norbash AM Feller JF, Dake MD, Jeffrey RB, Napel S. Perspective volume rendering of CT and MR images: Applications for endoscopic imaging. *Radiology.* 199(2):321-330, 1996.
10. Katz DS, Merchant N, **Beaulieu CF**, Blankenberg F. Clinical Image: Lipoblastoma of the thigh: MR appearance. *JCAT* 20(6):1002-1003, 1996.
11. Mindelzun RE, **Beaulieu CF**. Using biphasic CT to reveal gastrointestinal arteriovenous malformations. *AJR.* 168(2):437-438, 1997.
12. Sommer FG, Olcott EW, Ch'en IY, **Beaulieu CF**. Volume rendering of CT data: applications to the genitourinary tract. *AJR.* 168(5):1223-1226, 1997.
13. Ch'en IY, Katz DS, Jeffrey RB Jr, Daniel BL, Li KCP, **Beaulieu CF**, Mindelzun RE, Yao D, Olcott EW. Do arterial phase helical CT images improve detection or characterization of colorectal liver metastases? *JCAT.* 21(3):391-397, 1997.

14. Eller DJ, Katz DS, Bergman AG, Fredericson M, **Beaulieu CF**. Sacral fatigue fractures in long distance runners. *Clin. Sport Medicine*. 21(3):391-397, 1997.
15. **Beaulieu CF**, Mindelzun RE, Dolph J and Jeffrey, RB Jr. The infraconal compartment- a bidirectional pathway for spread of disease between the extraperitoneal abdomen and pelvis. *JCAT*. 21(2):223-228, 1997.
16. **Beaulieu CF**, Ladd AL. MR arthrography of the wrist: technique for non-fluoroscopic injection of the radiocarpal joint. *AJR*. 170(3):606-608, 1998.
17. **Beaulieu CF**, Napel S, Daniel BL, Ch'en IY, Rubin GD, Johnstone IM, and Jeffrey RB Jr. Detection of colonic polyps in a phantom model: implications for virtual colonoscopy data acquisition. *J Comput Assist Tomogr*. 1998 Jul-Aug;22(4):656-63.
18. Ha TPT, Li KCP, **Beaulieu CF**, Bergman AG, Chen IY, Eller DJ, Cheung LP, Herfkens RJ. Anterior cruciate ligament injury: Fast spin echo MR imaging with arthroscopic correlation in 217 examinations. *AJR*. 170(5):1215-1219, 1998.
19. Paik DS, **Beaulieu CF**, Jeffrey RB Jr, Rubin GD, Napel S. Automated flight path planning for virtual endoscopy. *Medical Physics*. 25(5):629-637, 1998.
20. Sheikh SF, Paik DS, **Beaulieu CF**, Rubin GD, Jeffrey RB Jr, Napel S. Wide-angle virtual endoscopy using multiple-view rendering: the virtual cockpit. *RSNA EJ*. October, 1998.
21. Gold GE, Thedens DR, Pauly JM, Fechner KP, Bergman G, **Beaulieu CF**, Macovski A. MR imaging of articular cartilage of the knee: new methods using ultrashort TEs. *AJR*. 170, 1223-6, 1998.
22. Gold GE, Bergman AG, Pauly JM, Lang P, Butts RK, **Beaulieu CF**, Hargreaves B, Frank L, Boutin RD, Macovski A, Resnick D. Magnetic resonance imaging of knee cartilage repair. *Top Magn Reson Imaging*. 9:377-92, 1998.
23. Karadi CA, **Beaulieu CF**, Jeffrey RB Jr, Paik DS, Napel S. Display modes for CT colonography, part I: synthesis and insertion of polyps into patient CT data. *Radiology*. 212:195-201, 1999.
24. **Beaulieu CF**, Jeffrey RB Jr, Karadi CA, Paik DS, Napel S. Display modes for CT colonography, part II: blinded comparison of axial CT, virtual endoscopy, and panoramic-view volume rendering. *Radiology*. 212:203-212, 1999.
25. **Beaulieu CF**, Hodge DK, Bergman AG, Butts K, Daniel BL, Napper CL, Darrow RD, Dumoulin CL, and Herfkens RJ. Glenohumeral relationships during physiological shoulder motion and stress testing: initial experience with open MR imaging and active imaging plane registration. *Radiology*. 212:699-705, 1999.
26. Pearle AD, Daniel BL, Bergman AG, **Beaulieu CF**, et al. Joint motion in an open MR unit using MR tracking. *J Magn Reson Imaging*. 10:8-14, 1999.
27. Brukner P, Fanton G, Bergman G, **Beaulieu CF**, Matheson G. Bilateral Stress Fractures of the Anterior Part of the Tibial Cortex. *J. Bone Joint Surg. (Am)* 82-A(2):213-218, 2000.

28. Armerding MD, Rubin GD, **Beaulieu CF**, Slonim SM, Olcott EW, Samuels SL, Jorgensen MJ, Semba CP, Jeffrey RB, Jr., Dake MD. Aortic aneurysmal disease: assessment of stent-graft treatment-CT versus conventional angiography. *Radiology*. 215:138-46, 2000.
29. Paik DS, **Beaulieu CF**, Jeffrey RB Jr, Karadi CA, Napel S. Visualization modes for CT colonography using cylindrical and planar map projections. *J Comput Assist Tomogr*. 24:179-88, 2000.
30. Nino-Murcia M, Olcott EW, Jeffrey RB, Jr., Lamm RL, **Beaulieu CF**, Jain KA. Focal liver lesions: pattern-based classification scheme for enhancement at arterial phase CT. *Radiology*. 215:746-51, 2000.
31. Summers RM, **Beaulieu CF**, Pusanik LM, Malley JD, Jeffrey RB Jr. Glazer DI, Napel S. An automated polyp detector for CT colonography. *Radiology*. 216:284-290, 2000.
32. Fleischmann D, Rubin GD, Paik DS, Yen SY, Hilfiker P, **Beaulieu CF**, Napel S. Helical Stair-Step Artifacts in Single-Slice versus Multi-Slice CT. *Radiology*. 216:185-96, 2000.
33. Pelc J, **Beaulieu CF**. Volume rendering of tendon-bone relationships using unenhanced CT. *AJR*. 176:973-7, 2001
34. Hodge DK, **Beaulieu CF**, Thabit GH III, Gold GE, Bergman AG, Butts RK, Dillingham MF, Herfkens RJ. Dynamic MR imaging and stress testing in glenohumeral instability: comparison with normal shoulders and clinical/surgical findings. *JMRI*. 13:748-56, 2001.
35. Hung PW, Paik DS, Napel S, Yee R, Jeffrey R Jr, Steinauer-Gebauer A, Min J, Jathavedam A, **Beaulieu CF**. Quantification of Distention in CT Colonography: Development and Validation of Three Computer Algorithms. *Radiology*. 2002 222: 543-554
36. Gokturk SB, Tomasi C, Acar B, **Beaulieu CF**, Paik DS, Jeffrey RB Jr., Yee J, Napel S, "A Statistical 3D Pattern Processing Method For Computer-aided Detection of Polyps in CT Colonoscopy," *IEEE Transactions on Medical Imaging*. 20(12):1251-1260, 2001.
37. Acar B, **Beaulieu CF**, Gokturk SB, Tomasi C, Paik DS, Jeffrey RB Jr, Yee J, Napel S. "Edge Displacement Field Based-Classification for Improved Detection of Polyps in CT Colonography," *IEEE Transactions on Medical Imaging*. 21:1461-7, 2002.
38. Gokturk SB, Tomasi C, Acar B, **Beaulieu CF**, Napel S. "A Learning Method for Automated Polyp Detection," MICCAI 2001. *Utrecht, The Netherlands*. October 14-17, 2001\*
39. Acar B, Napel S, Paik DS, Gokturk SB, Tomasi C, **Beaulieu CF**. "Using Optical Flow Fields for Polyp Detection in Virtual Colonoscopy," MICCAI 2001. *Utrecht, The Netherlands*. October 14-17, 2001\*
40. Genant JW, Vandevenne JE, Bergman AG, **Beaulieu CF**, Kee ST, Norbash AM, Lang P. Interventional Musculoskeletal Procedures Performed by Using MR Imaging Guidance with a Vertically Open MR Unit: Assessment of Techniques and Applicability. *Radiology*. 223:127-136, April, 2002.

41. Raman R, Napel S, **Beaulieu CF**, Bain ES, Jeffrey RB Jr, Rubin GD. Automated Generation of Curved Planar Reformations from Volume Data: Method and Evaluation. *Radiology*. 223:275-280, April, 2002.
42. Prokesch RW, Chow LC, **Beaulieu CF**, Nino-Murcia M, Mindelzun RE, Bammer R, Huang J, Jeffrey RB Jr. Local staging of pancreatic carcinoma with Multi-detector Row CT: Use of Curved Planar Reformations Initial Experience. *Radiology*. 225:759-65, 2002.
43. Prokesch RW, Chow LC, **Beaulieu CF**, Bammer R, Jeffrey RB Jr. Isoattenuating pancreatic adenocarcinomas at multi-detector row CT: secondary signs. *Radiology*. 224:764-8, 2002.
44. Hargreaves BA, Gold GE, **Beaulieu CF**, Vasanawala S, Nishimura DG, Pauly JM. Comparison of new sequences for high resolution cartilage imaging. *Magn Resonan in Med*. 49(4):700-709, April 2003
45. Fredericson M, Salamancha L, **Beaulieu CF**. Sacral stress fractures: tracking down nonspecific pain in distance runners. *The Physician and Sports Medicine*. 31:31-42, 2003.
46. McAdams TR, Spisak S, **Beaulieu CF**, Ladd AL. The effect of pronation-supination on the minimally displaced scaphoid fracture. *Clin Orthop*. 411:255-259, 2003.
47. Stevens GM, Birdwell RL, **Beaulieu CF**, Ikeda DM, Pelc NJ. Circular Tomosynthesis: Potential for Imaging the Upper Cervical Spine and Breast. *Radiology*. 228:569-575, 2003.
48. Grafe MW, McAdams TR, **Beaulieu CF**, Ladd AL. Magnetic resonance imaging in the diagnosis of chronic posterolateral rotatory instability of the elbow: a case report and review of the literature. *Am J Orthop*. 32:501-503, 2003.
49. Sundaram P, **Beaulieu CF**, Paik DS, Schraedley-Desmond P, Napel S. CT colonography: does improved z resolution help computer-aided polyp detection? *Med Phys*. 30:2663-2674, 2003.
50. Herneth AM, Philipp MO, Pretterklieber ML, Balassy C, Winkelbauer FW, **Beaulieu CF**. Asymmetric closure of ischiopubic synchondrosis in pediatric patients: correlation with foot dominance. *AJR Am J Roentgenol*. 182:361-365, 2004.
51. Raman B, Raman R, Raman L, **Beaulieu CF**. Radiology on handheld devices: image display, manipulation, and PACS integration issues. *Radiographics*. 24:299-310, 2004.
52. Paik DS, **Beaulieu CF**, Rubin GD, Acar B, Jeffrey RB Jr, Yee J, Dey, J, Napel S. Surface Normal Overlap: a computer-aided detection algorithm with application to colonic polyps and lung nodules in helical CT. *IEEE Trans Med Imaging*. 23:661-75, 2004.
53. Mani A, Napel S, Paik DS, Jeffrey RB, Jr, Yee J, Olcott EW, Prokesch R, Davila M, Schraedley-Desmond P, **Beaulieu CF**. CT colongraphy: feasibility of computer-aided polyp detection in a "First Reader" paradigm. *J Comput Assist Tomogr*. 28:318-26, 2004.
54. Gold GE, Han E, Stainsby J, Wright G, Brittain J, **Beaulieu CF**. Musculoskeletal MR imaging at 3.0 Tesla: relaxation times and image contrast. *AJR Am J Roentgenol*. 183:343-51, 2004.
55. Bilello M, Gokturk SB, Desser T, Napel S, Jeffrey Jr. RB, **Beaulieu CF**. Automatic detection and classification of hypodense hepatic lesions on contrast-enhanced venous-phase CT. *Medical Physics*. 31, 2584-93, 2004.



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56. Li P, Napel S, Acar B, Paik D, Jeffrey Jr. RB, **Beaulieu CF**. Automatic registration of colonic polyps between supine and prone scans in CT colonography. *Medical Physics*. 31:2912-2923, 2004.
57. Gold GE, Suh B, Sawyer-Glover A, **Beaulieu CF**. Musculoskeletal MR imaging at 3.0 Tesla: initial clinical experience. *AJR Am J Roentgenol*. 183:1479-1486, 2004.
58. Vasanaawala SS, Hargreaves BA, Pauly JM, Nishimura DG, **Beaulieu CF**, Gold GE. Rapid musculoskeletal MR imaging with phase-sensitive steady state free precession. *AJR Am J Roentgenol*. 184:1450-5, 2005. President's Award, ARRS 2004 Annual Residents in Radiology Awards Competition.
59. Gold GE, Fuller SE, Hargreaves BA, Stevens KJ, **Beaulieu CF**. Driven equilibrium magnetic resonance imaging of articular cartilage: initial clinical experience. *J Magn Reson Imaging*. 2005; 21: 4: 476-81
60. Gold GE, Hargreaves BA, Reeder SB, Vasanaawala SS, **Beaulieu CF**. Controversies in protocol selection in the imaging of articular cartilage. *Semin Musculoskelet Radiol*. 9:161-72, 2005
61. Hwang B, Fredericson M, Chung CB, **Beaulieu CF**, Gold GE MRI findings of femoral diaphyseal stress injuries in athletes. *AJR Am J Roentgenol*. 185:166-73, 2005
62. Reeder SB, Pineda AR, Wen Z, Shimakawa A, Yu H, Brittain JH, Gold GE, **Beaulieu CF**, Pelc NJ Iterative decomposition of water and fat with echo asymmetry and least-squares estimation (IDEAL): Application with fast spin-echo imaging. *Magn Reson. Med* 54:636-44, 2005. (Note typographical error in middle initial in journal.)
63. Na JB, Bergman AG, Oloff LM, **Beaulieu CF**. The flexor hallucis longus: tenographic technique and correlation of imaging findings with surgery in 39 ankles. *Radiology*. 236:974-82, 2005.
64. Pappas GP, Blemker SS, **Beaulieu CF**, McAdams TR, Whalen ST, Gold GE. In vivo anatomy of the Neer and Hawkins sign positions for shoulder impingement. *J Shoulder Elbow Surg*. 15:40-9, 2006.
65. Gold GE, Hargreaves BA, Vasanaawala SS, Webb JD, Shimakawa AS, Brittain JH, **Beaulieu CF**. Articular cartilage of the knee: evaluation with fluctuating equilibrium MR imaging--initial experience in healthy volunteers. *Radiology*. 2006; 238:712-718.
66. Shi R, Schraedley-Desmond P, Napel S, Olcott EW, Jeffrey RB Jr, Yee J, Zalis ME, Margolis D, Paik DS, Sherbondy AJ, Sundaram P, **Beaulieu CF**. CT colonography: influence of 3D viewing and features of polyp candidates on interpretation using computer aided detection. *Radiology*. 2006;239:768-776.
67. Fuller S, Reeder S, Shimakawa A, Yu H, Johnson J, **Beaulieu CF**, Gold GE "Iterative decomposition of water and fat with echo asymmetry and least-squares estimation (IDEAL) fast spin-echo imaging of the ankle: initial clinical experience." *AJR Am J Roentgenol*. 2006 (Dec); 187: 6: 1442-7
68. Reeder SB, Yu H, Johnson J, Shimakawa A, Brittain JH, Pelc NJ, **Beaulieu CF**, Gold GE. T1 and T2 weighted fast spin-echo imaging of the brachial plexus and cervical spine with IDEAL water-fat separation. *JMRI*. 24:825-32, Oct 2006.

69. Gold GE, Hargreaves BA, Reeder SB, Block WF, Vasanaawala SS, Kornaat PR, Bammer R, Newbould R, **Beaulieu CF**. Balanced SSFP imaging of the musculoskeletal system. *JMRI*. 2007 (Feb); 25:270.
70. Quon A, Napel S, **Beaulieu CF**, Gambhir SS. "Flying Through" and "Flying Around" a PET/CT Scan: Pilot Study and Development of 3D Integrated 18F-FDG PET/CT for Virtual Bronchoscopy and Colonoscopy. *J Nuclear Med*. 47:1081-87, 2006.
71. Gold GE, Reeder, SB, Yu, H, Kornaat, P, Shimakawa, AS, Johnson, JW, Pelc, NJ, **Beaulieu CF**, Brittain, JH. Articular cartilage of the knee: rapid three-dimensional MR imaging at 3.0T with IDEAL balanced steady-state free precession – initial experience. *Radiology*. 240:546-51, 2006.
72. Gold GE, Busse RF, Beehler C, Han E, Brau AC, Beatty PJ, **Beaulieu CF**. "Isotropic MRI of the knee with 3D fast spin-echo extended echo-train acquisition (XETA): initial experience." *AJR Am J Roentgenol*. 188:1287-93, 2007.
73. Konukoglu E, Acar B, Paik D, **Beaulieu CF**, Rosenberg J, Napel S. Polyp enhancing level-set evolution of colon wall: method and pilot study. *IEEE Trans Med Imaging*. 26:1649-56, 2007.
74. Gold GE, Pappas GP, Blemker SS, Whalen ST, Campbell G, McAdams TA, **Beaulieu CF**. Abduction and external rotation in shoulder impingement: an open MRI study on healthy volunteers, initial experience. *Radiology*. 244:815-22, 2007.
75. Shi R, Napel S, Rosenberg JK, Shin LK, Freeman CB, Mogensen MA, Joshi AJ, Pankhudi P, **Beaulieu CF**, Transparent rendering of intraluminal contrast for 3D polyp visualization at CT colonography. *J Comput Assist Tomogr*. 31:773-9, 2007.
76. Sundaram P, Zamorodian A, **Beaulieu CF**, Napel, S. Colon polyp detection using smoothed shape operators: preliminary results. *Med Image Anal*. 12:99-119, 2008.
77. Nguyen JT, Peterson JS, Biswal S, **Beaulieu CF**, Fredericson M. Stress-related injuries around the lesser trochanter in long-distance runners. *AJR Am J Roentgenol*. 2008; 190:1616-1620.
78. McAdams TR, Biswal S, Stevens KJ, **Beaulieu CF**, Mandelbaum BR. Tibial aperture bone disruption after retrograde versus antegrade tibial tunnel drilling: a cadaveric study. *Knee Surg Sports Traumatol Arthrosc*. 9:818-22, 2008.
79. Stevens KJ, Busse RF, Han E, Brau ACS, Beatty PJ, **Beaulieu CF**, Gold GE. Ankle: Isotropic MR Imaging with 3D-FSE-Cube--Initial Experience in Healthy Volunteers." *Radiology*. 249(3): 1026-33
80. Vandevenne JE, Vanhoenacker F, **Beaulieu CF**, Bergman, AG, Butts Pauly, K, Dillingham, MF, Lang, PK. All-in-one magnetic resonance arthrography of the shoulder in a vertically open magnetic resonance unit. *Acta Radiol*. 49:918-27, 2008.
81. Rubin D, Rodriguez C, Shah P, **Beaulieu CF**. iPad: Semantic Annotation and Markup of Radiological Images. *AMIA Annual Symposium Proceedings*. 2008, p.626.
82. Horoschak M, Tran PT, Bachireddy P, West RB, Mohler D, **Beaulieu CF**, Kapp DS, Donaldson, SS. External Beam Radiation Therapy Enhances Local Control in Pigmented Villonodular Synovitis. *Int J Radiat Oncol Biol Phys*. 75:183-187, 2009.

83. Stevens KJ, Crain JM, Akizuki KH, **Beaulieu CF**. Imaging and Ultrasound-Guided Steroid Injection of Internal Oblique Muscle Strains in Baseball Pitchers. *Am J Sports Med.* 38(3):581-5, 2010.
84. Napel SA, **Beaulieu CF**, Rodriguez C, et al. Automated Retrieval of CT Images of Liver Lesions Based on Image Similarity: Method and Preliminary Results. *Radiology.* 256(1):243-252, 2010.
85. Akgul CB, Rubin DL, Napel S, **Beaulieu CF**, Greenspan H, Acar B. Content based image retrieval in radiology: current status and future directions. *J Digit Imaging.* Apr 8, 2010 [Epub ahead of print].
86. Zissen M, Wallace G, Stevens KJ, Fredericson M, **Beaulieu CF**. High Hamstring Tendinopathy: Magnetic Resonance and Ultrasound Imaging and Therapeutic Efficacy of Percutaneous Corticosteroid Injection. *AJR Am J Roentgenol.* 195:993-998, 2010.
87. Korenblum D, Rubin D, Napel S, Rodriguez C. **Beaulieu CF**. Managing Biomedical Image Metadata for Search and Retrieval of Similar Images. *J Digit Imaging.* 24:739-48, 2011
88. Xu J, Faruque JS, **Beaulieu CF**, Rubin DL, Napel S. A Comprehensive Descriptor of Shape: Method and Application to Content-Based Retrieval of Similar Appearing Lesions in Medical Images, *J Digit Imaging.* 25:121-8, 2012
89. Gimenez F, Xu J, Liu TT, **Beaulieu CF**, Rubin DL, Napel S. On the Feasibility of Predicting Radiological Observations from Computational Imaging Features of Liver Lesions in CT Scans. In:Healthcare Informatics, Imaging and Systems Biology (HISB), *First International Conference on: IEEE.* 2011; 346-350. (Peer reviewed conference proceedings)
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94. Shi R, Margolis D, Napel S, Jeffrey RB, Olcott E, Schraedley-Desmond P, **Beaulieu CF**. "CAD in colonography: Influence of Polyp Features and 3D Viewing on Interpretation," *Fifth International Symposium on Virtual Colonoscopy*. Boston, MA October 28-29, 2004.
95. Paik DS, Sundaram P, **Beaulieu CF**, Napel S. "Anatomically-selective Morphological Enhancement and Suppression in CT Colonography: Initial Experience," *Fifth International Symposium on Virtual Colonoscopy*. Boston, MA October 28-29, 2004.
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97. Sundaram P, Sifakis E, Paik DS, **Beaulieu CF**, Napel S. "Physically based approach to removal of folds in CT Colonography: Proof of concept," *Radiological Society of North America 90th Scientific Sessions*. November 2004.



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99. Konukoglu E, Acar B, Paik DS, **Beaulieu CF**, Napel S, “Heat Diffusion Based Detection Of Colonic Polyps In CT Colonography,” *13th Annual European Signal Processing Conference*. Antalya, Turkey, Sept. 4-8, 2005. Awarded 3rd Place, Student Paper Contest.
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114. Gupta A, Napel S, Greenspan H, **Beaulieu CF**, Rubin DL. Quantifying margin characteristics of lesions from CT images for content-based image retrieval. *Annual Scientific Meeting, Radiological Society of North America*. Chicago, IL. 2009; 915.
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120. Akgul CB, Rubin DL, Napel S, **Beaulieu CF**, Greenspan H, Acar, B. "A comprehensive Descriptor of Shape: Method and Application to Content-based Retrieval of Similar Appearing Lesions in Medical Images." *Society of Imaging Informatics in Medicine*. April 2011.
121. Korenblum D, Rubin D, Napel S, Rodriguez C, **Beaulieu CF**. "Managing Biomedical Image Metadata for Search and Retrieval of Similar Images." *Society of Imaging Informatics in Medicine*. August 2011.

122. Gimenez F, Xu J, Liu Y, Liu TT, **Beaulieu CF**, Rubin DL, Napel S. "On the Feasibility of Predicting Radiological Observations from Computational Imaging Features of Liver Lesions in CT Scans," *Healthcare Informatics, Imaging, and Systems Biology (HISB)*. San Jose, CA. July 27-29, 2011.
123. Faruque JS, Rubin DL, **Beaulieu CF**, Rosenberg J, Kamaya A, Tye G, Summers RM, Napel S. "A Scalable Reference Standard of Visual Similarity for a Content-Based Image Retrieval System," *Healthcare Informatics, Imaging, and Systems Biology (HISB)* San Jose, CA. July 27-29, 2011.
124. Faruque JS, Rubin DL, **Beaulieu CF**, Kamaya A, Tye GA, Napel S, et al. "A Scalable Reference Standard for Perceptual Similarity of CT Liver Lesions using Matrix Completion Techniques." *Radiological Society of North America 97th Scientific Sessions*. November 2011.
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126. Gimenez FJ, Xu J, Liu T, **Beaulieu CF**, Rubin DL, Napel S, et al. "Prediction of radiologist observations using computational image features: Method and Preliminary Results." *Radiological Society of North America 97th Scientific Sessions*. November 2011.
127. Dave RB, Stevens KJ, Shivaram GM, Garza D, Dillingham MF, **Beaulieu CF**. "Ultrasound Guided Musculoskeletal Interventions in Professional American Football: 16 Years of Experience." *Radiological Society of North America 97th Scientific Sessions*. November 2011.
128. Faruque J, Rubin D, **Beaulieu C**, Rosenberg J, Napel S. A statistical model for predicting sample size for radiologist's perception of similarity in liver lesions. *Radiological Society of North America 98th Scientific Sessions*. Chicago, IL, 2012.
129. Shah B, Xu J, Do B, Rubin D, Napel S, **Beaulieu C**. Quantitative analysis of focal bone tumors on radiographs: initial experience comparing lucent and sclerotic lesions. *Radiological Society of North America 98th Scientific Sessions*. Chicago, IL, 2012.
130. Do B, Shah B, Biswal S, **Beaulieu C**. Natural language processor to identify "missing" information in radiology reports: experience studying musculoskeletal tumor reporting. *Radiological Society of North America 98th Scientific Sessions*. Chicago, IL, 2012.
131. Gimenez F, Xu J, Liu TT, **Beaulieu C**, Rubin D, Napel S. Automatic annotation of radiological observations in liver CT images. American Medical Informatics Association Scientific Sessions. Chicago, IL, 2012.
132. Kraus E, **Beaulieu C**, Fredericson M. Piriformis syndrome with variant sciatic nerve anatomy. American association of physiatry Annual Meeting, 2014.
133. Varenika V, Lutz AM, **Beaulieu CF**, Bucknor MD. Retrospective MRI analysis of variant sciatic nerve anatomy in relation to the piriformis muscle. *Radiological Society of North America 2015*; Submitted to the 2015 Annual Meeting

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134. Varenika, V., Lutz, A., **Beaulieu, C.**, Bucknor, M. Retrospective MRI analysis of variant sciatic nerve anatomy in relation to the piriformis muscle. Poster presentation at the 42nd annual International Skeletal Society meeting. Maui, HI. September, 2015.
135. Sangers, T., E.H. Oei, **C.F. Beaulieu**, D.J. Grunhagen, D.L. Rubin, and O. Gevaert. Radiogenomics in desmoid tumors: association of semantic and computational MR image features with CTNNB1 mutation status. *Radiological Society of North America*, 2016.
136. Luce, A., **C.F. Beaulieu**, and A.M. Lutz. Sciatic nerve anatomical variants and piriformis syndrome: is it painful to be different? *Radiological Society of North America*, 2016.
137. Do, BH, **Beaulieu, CF**. Human vs. Machine: *distinguishing Enchondroma from Chondrosarcoma with a Bayesian Network*. *Society of Skeletal Radiology Annual Meeting. Austin, Tx, March, 2018. Winner of "Man vs. Machine Award"*
138. Vossler, SR, Banerjee, I, Do, BH, Rubin, DL, **Beaulieu, CF**. Semantic labelling of musculoskeletal radiographs using deep learning. *Radiological Society of North America*, 2017
139. Chaudhari, AS, Sveinsson, B, Wood, JP, Stevens, KJ, **Beaulieu, CF**, Oei, EHG, Rosenberg, JK, Levine, EG, Kogan, F, Alley, MT, Gold, GE, MD, Hargreaves, BA. Diagnostic Comparisons of Two Rapid Knee MRI Protocols for Comprehensive Whole-Joint Assessment: A Multi-Reader Feasibility Study. Accepted to ISMRM 2018, Paris, France.
140. Reicher, JJ, Do, BH, Nguyen, M, **Beaulieu, CF**. Single-input bone tumor diagnosis based on convolutional neural network classification of bone tumor matrix. Accepted for Society of Imaging Informatics in Medicine Annual Meeting, May 31-June 2, 2018.
141. Chaudhari A, Sveinsson B, Wood J, Stevens K, **Beaulieu C**, Oei E.H., Rosenberg J, Kogan F, Alley M, Gold G, and Hargreaves B. *Comparison of Diagnostic Performances of Two Rapid Knee MRI Protocols for Comprehensive Whole-Joint Assessment: A Multi-Reader Feasibility Study*. Intl Soc Magn Reson Med, Paris, 2018. Magna Cum Laude Merit Award - International Society for Magnetic Resonance in Medicine 2018
142. Fang,C, Reicher,J, **Beaulieu,C**, Biswal,S, Do,B, Automatic Diagnosis Of ACL Tear On X-Ray In Trauma Patients: Achieving "Expert Level" Perception Of Subtle Radiology Findings (Segond Fracture) Using a Sparse Data Set . Radiological Society of North America 2018 Scientific Assembly and Annual Meeting, November 25 - November 30, 2018, Chicago  
IL. [archive.rsna.org/2018/180167569.html](http://archive.rsna.org/2018/180167569.html) Accessed May 31, 2019
143. Daehyun Yoon, Brian Hargreaves, **Christopher Beaulieu**, Amelie Lutz A 1x1x1 mm Isotropic resolution CUBE-FLEX for imaging piriformis syndrome. ISMRM May 11-16, 2019, Montreal, QC.
145. Akshay Chaudhari, Zhongnan Fang, Murray Grissom, Bragi Sveinsson, Jeff Wood, **Christopher Beaulieu**, Edwin Oei, Jarrett Rosenberg, Feliks Kogan, Jin Hyung Lee, Marcus Alley, Garry Gold, Kathryn Stevens, Brian Hargreaves 5-Minute Double-Echo in Steady-State with Separated Echoes for Comprehensive Whole-Joint Knee MRI Assessment with and without a Proton-Density-Weighted Sequence. ISMRM May 11-16, 2019, Montreal. **Winner of ISMRM W.S. Moore Young Investigator Award**

146. Zoe Doyle, Daehyun Yoon, Philip Lee, Brian Hargreaves, **Christopher Beaulieu**, Kathryn Stevens. Comparison of Accelerated MAVRIC-SL with Robust-PCA and Conventional MAVRIC-SL in Evaluation of Symptomatic Total Hip Arthroplasties. ISMRM May 11-16, 2019, Montreal, QC

## V. Submitted Abstracts (None)

None

## VI. Invited Presentations (86 Listed)

1. **Beaulieu CF**. "Fast Spin Echo MRI in the Musculoskeletal System". Singapore General Hospital, Stanford University Teleconference, Stanford, CA. 12/95.
2. **Beaulieu CF**. "MRI of the Ankle and Foot; MRI of the Wrist and Hand; Spiral CT of Abdominal Trauma". Stanford - Singapore General 3rd Annual Joint Update, Stanford, CA. 8/96.
3. **Beaulieu CF**. "Visual Cues in Three-Dimensional Medical Imaging: Application to 3D CT Colonography". Department of Psychology, Visual Psychophysics Spring Seminar, Stanford, CA. 1997.
4. **Beaulieu CF**. "Dynamic, Physiologic Joint Imaging". International Society of Magnetic Resonance in Medicine, Sydney, Australia. 4/98.
5. **Beaulieu CF**. "Virtual Colonoscopy: The Future". American Society of Gastrointestinal Endoscopy Annual Meeting, New Orleans, LA. 5/98.
6. **Beaulieu CF**. "CT Colonography with Multidetector Array CT". First Annual Symposium on Multidetector CT, San Francisco, CA. 6/99.
7. **Beaulieu CF**. "Virtual Colonoscopy: State of the Art". American College of Surgeons 85th Annual Meeting, Session on "Virtual reality testing: space-age technology for the 21st century". San Francisco, CA. 10/99.
8. **Beaulieu CF**. "Cutting Edge Technologies in CT: Virtual Imaging". RSNA Refresher Course, Chicago, IL. 12/3/99.
9. **Beaulieu CF**. "Musculoskeletal MRI: Technical Considerations" Current Concepts of Magnetic Resonance; Stanford Postgraduate Course. Monterey, CA. 10/99.
10. **Beaulieu CF**. "Virtual Colonoscopy and 3D Imaging of Abdominal Organs". Stanford Postgraduate Course. Jackson Hole, WY. 9/99.
11. **Beaulieu CF**. "Spiral CT of Abdominal Trauma". Stanford Postgraduate Course. Jackson Hole, WY. 9/99.
12. **Beaulieu CF**. "MR Imaging of the Brachial Plexus". Stanford Postgraduate Course. Jackson Hole, WY. 9/99.

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13. **Beaulieu CF.** "Motion MRI" Stanford University Sports Medicine Symposium: The athlete's Shoulder - evaluation and treatment. Stanford, CA. 5/00.
14. **Beaulieu CF.** "Lower extremity stress fractures in athletes" Grand Rounds, Physical Medicine and Rehabilitation, Stanford Medical Center, Stanford, CA. March, 2000.
15. **Beaulieu CF.** "Anatomy and Imaging of the Brachial Plexus" Grand Rounds, Department of Neurology, Stanford University Medical Center. Stanford, CA. 3/2000.
16. **Beaulieu CF.** "CT Colonography with Multidetector Array CT". Second International Symposium on Multidetector CT, San Francisco, CA. 6/00.
17. **Beaulieu CF.** "MR Imaging of Osseous Overuse Injuries". Stanford Radiology Postgraduate Course on Advances in MR Imaging, San Francisco, CA. 6/00.
18. **Beaulieu CF.** "Dynamic MR Imaging of Glenohumeral Instability". Stanford Radiology Postgraduate Course on Advances in MR Imaging, San Francisco, CA. 6/00.
19. **Beaulieu CF.** "CT Colonography: Methods for Efficient and Accurate Interpretation" Third Annual Symposium on Multidetector CT, San Francisco, CA. 6/01.
20. **Beaulieu CF.** "Musculoskeletal MRI: Technical Considerations" Current Concepts of Magnetic Resonance; Stanford Postgraduate Course. Monterey, CA. 10/01.
21. **Beaulieu CF.** "MRI of the Brachial Plexus" Current Concepts of Magnetic Resonance; Stanford Postgraduate Course. Monterey, CA. 10/01.
22. **Beaulieu CF.** "Cutting Edge Technologies in CT: Virtual Imaging" RSNA Refresher Course. Chicago, IL. 11/01.
23. **Beaulieu CF.** "Virtual Colonoscopy" Stanford Postgraduate Course. Snowmass, CO. 2/02
24. **Beaulieu CF.** "Virtual Imaging" Stanford Postgraduate Course. Snowmass, CO. 2/02
25. **Beaulieu CF.** "MR Imaging of the Brachial Plexus" Stanford Postgraduate Course. Snowmass, CO. 2/02
26. **Beaulieu CF.** "Radiology of Bone Tumors" Stanford Postgraduate Course. Snowmass, CO. 2/02
27. **Beaulieu CF.** "Musculoskeletal MRI: Technical Considerations" Stanford Postgraduate Course. Snowmass, CO. 2/02
28. **Beaulieu CF.** "Spiral CT of the Musculoskeletal System" Stanford Postgraduate Course. Snowmass, CO. 2/02
29. **Beaulieu CF.** "Osseous Stress Injuries in Sports" Stanford Postgraduate Course. Las Vegas, NV. 2/02.
30. **Beaulieu CF.** "Dynamic MR Imaging of the Shoulder" Stanford Postgraduate Course. Las Vegas. NV 2/02.
31. **Beaulieu CF.** "MR Imaging of the Brachial Plexus". Stanford Postgraduate Course. Las Vegas, NV. 2/02.

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32. **Beaulieu CF.** “Interventional Sports Medicine” Stanford Postgraduate Course. Las Vegas, NV. 2/02.
33. **Beaulieu CF.** “MRI of Bone Tumors.” Nuclear Medicine Grand Rounds. Stanford, CA. 3/02.
34. **Beaulieu CF.** “Osseous Stress Injuries in Sports.” SCBT/MR Annual Course. Charleston, SC. 3/02
35. **Beaulieu CF.** “Colorectal Cancer: Screening Issues.” SCBT/MR Annual Course. Charleston, SC. 3/02
36. **Beaulieu CF.** “Workstations: How to use Them Effectively in Clinical Practice.” SCBT/MR Annual Course, Charleston, SC. 3/02
37. **Beaulieu CF.** “Interventional Sports Medicine.” RSNA Refresher Course. Chicago, IL. 11/03.
38. **Beaulieu CF.** “Injuries in American Football.” RSNA Special Session on Sports Medicine. Chicago, IL. 11/03.
39. **Beaulieu CF.** “Technical Aspects of Musculoskeletal MRI” ISMRM Weekend educational course. Kyoto, Japan. 4/04.
40. **Beaulieu CF.** “Practical Concepts for MRI Protocol Design”, CME course entitled Orthopedic Imaging in Wine Country. Sonoma, CA. 4/05.
41. **Beaulieu CF.** “MRI at the Fringes – 0.2 T to 3.0T”, CME course entitled Orthopedic Imaging in Wine Country. Sonoma, CA, 4/05.
42. **Beaulieu CF.** “MRI of the Ankle”, CME course entitled Orthopedic Imaging in Wine Country, Sonoma. CA. 4/05.
43. **Beaulieu CF.** “MRI of the Brachial Plexus”, CME course entitled Orthopedic Imaging in Wine Country. Sonoma, CA. 4/05.
44. **Beaulieu CF.** “Musculoskeletal Spiral and Multidetector CT”, CME course entitled Orthopedic Imaging in Wine Country. Sonoma, CA. 4/05.
45. **Beaulieu CF.** “CT Colonography: Methods for Efficient and Accurate Interpretation” Fifth Annual Symposium on Multidetector CT. San Francisco, CA. 6/05.
46. **Beaulieu CF.** “Musculoskeletal MRI: Technical Considerations” Current Concepts of Magnetic Resonance; Stanford Postgraduate Course. Monterey, CA. 10/05.
47. **Beaulieu CF.** “MRI of the Shoulder and Elbow”, Stanford Symposium on Upper Extremity Injuries. Stanford, CA. 11/04.
48. **Beaulieu CF.** “Interventional Sports Medicine: Tendons” RSNA Categorical;/Refresher Course, Chicago. IL. 11/04.
49. **Beaulieu CF.** Five lectures, “Diagnostic Imaging Update” CME Course sponsored by Stanford Radiology. Beaver Creek, CO. 1/05.
50. **Beaulieu CF.** Four lectures and Course Director, Stanford Postgraduate Course. Las Vegas, NV. 3/05.

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51. **Beaulieu CF.** “Interventional Sports Medicine: Tendons” RSNA Categorical/Refresher Course. Chicago, IL. 12/05.
52. **Beaulieu CF.** Four lectures and Course Director, Stanford Postgraduate Course. Las Vegas, NV. 3/06.
53. **Beaulieu CF.** Four lectures, Stanford Postgraduate Course. Maui, HI. 3/06.
54. **Beaulieu CF.** Two lectures, Society of Computed Body Tomography and MRI. Phoenix, AZ. 3/06.
55. **Beaulieu CF.** Two lectures and Moderator, Stanford MDCT Course. San Francisco, CA. 6/06
56. **Beaulieu CF.** Introduction to Sports Imaging. Stanford University HumBio 159. Stanford, CA. 3/9/06.
57. **Beaulieu CF.** Four lectures. Stanford Postgraduate Course. Vail, CO. 1/07.
58. **Beaulieu CF.** Image-Guided Therapy in NFL Football, 13 Year Experience. NFL Physician’s Association Annual Meeting, at the NFL Combine. Indianapolis, IN. 2/23/07.
59. **Beaulieu CF.** Four lectures and Course Director, Stanford Postgraduate Course. Las Vegas, NV. 3/07.
60. **Beaulieu CF.** Image-Guided Interventions in Sports Medicine. PM&R Rounds. 3/20/07.
61. **Beaulieu CF.** Invited speaker, NIH Workshop on Virtual Colonoscopy. Natcher Conference Center, NIH Campus. 4/11/07.
62. **Beaulieu CF.** CT Colonography Update 2007. Northern California Gastroenterological Society. San Francisco, CA. 4/17/07.
63. **Beaulieu CF.** Radiology as a Medical Subspecialty. Stanford Premedical Association. Stanford, CA. 4/19/07.
64. **Beaulieu CF.** Two lectures, Society of Computed Body Tomography and MRI. Banff, Canada. Aug 6-9, 2008.
65. **Beaulieu CF.** Technical Aspects of Musculoskeletal MRI. Stanford Postgraduate Course. Monterey, CA. Oct 29, 2007.
66. **Beaulieu CF.** Four lectures, UCSF CME course on Musculoskeletal MRI. Nov 16, 2007.
67. **Beaulieu CF.** Visiting Professor, Duke University Medical Center Department of Radiology. Grand Rounds and Resident Case Conference. March 27, 2008.
68. **Beaulieu CF.** Two lectures, Society of Computed Body Tomography and MRI. Charleston, SC. April 1, 2008.
69. **Beaulieu CF.** Course co-director and four lectures, Advances in Neuroradiology and Musculoskeletal Imaging. Las Vegas, NV. May 1-3, 2008.
70. **Beaulieu CF.** Image Guided Injections, International Olympic Committee Advanced Physician Training Course. Stanford, CA. June 22, 2009.



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71. **Beaulieu CF.** State of the Art Imaging, International Olympic Committee Advanced Physician Training Course. Stanford, CA. June 23, 2009.
72. **Beaulieu CF.** Technical Aspects of Musculoskeletal MRI. Stanford Postgraduate Course. Monterey, CA. October 13, 2009.
73. **Beaulieu CF.** Introduction to Sports Medicine Imaging. HumBio 139 Stanford Undergraduate Course. Stanford, CA. October 20, 2009.
74. **Beaulieu CF.** Four lectures. Stanford Postgraduate Course. Beaver Creek, CO. January 2010.
75. **Beaulieu CF.** Four 20 min lectures. Society of Computed Body Tomography and MRI. San Diego, CA. March 10, 2010.
76. **Beaulieu CF.** Four 45 min lectures. Stanford Postgraduate Course. Kauai, HI. March 2011.
77. **Beaulieu CF.** Image guided therapy in Athletic Injuries. ARRS Categorical Course, Chicago, IL, May 3, 2011.
78. **Beaulieu CF.** MRI in Sports Medicine. RDO Diagnosticos Medicos, Sao Paulo, Brazil, May 9, 2011.
79. **Beaulieu CF.** Optimization of Multidetector CT for MSK Applications, and MRI of the Knee: Beyond the Ligaments and Menisci. UCSF Highlights in Radiology, San Francisco, CA, Oct 26, 2011.
80. **Beaulieu CF.** "Interventional Sports Medicine" and "Who Wants to be a Millionaire: the MSK version (case conference)". Visiting Professor, Winthrop University Hospital, Long Island, NY. Nov. 18, 2011
81. **Beaulieu CF.** Musculotendinous injuries: sonographic-guided interventions. Invited session for RSNA Refresher Course on Muscle Imaging: Beyond the Basics. RSNA Annual Meeting, Dec 2, 2016, Chicago, IL.
82. **Beaulieu CF.** IDKD 49<sup>th</sup> International Diagnostic Course Davos: Excellence in Teaching. Ten 1.5 hour workshops on Peripheral Nerve Imaging
83. **Beaulieu CF.** MRI of the Brachial Plexus. In Essentials of Musculoskeletal Imaging, RSNA 2017
84. **Beaulieu CF.** 6 lectures in Bones, Body and Brain MRI. Stanford Radiology CME course, May 19-24, 2018, Maui, HI
85. **Beaulieu CF.** International Institute for Continuing Medical Education (iiCME): Advanced Orthopedic Imaging in San Francisco, Aug 3-5, 2018.
  - Advanced Imaging of the Ankle
  - Advanced Imaging of the Foot
  - Groin Pain in Athletes
  - MRI of the Brachial Plexus
  - Osseous Stress Injuries
86. **Beaulieu CF.** Howard L. Steinbach Memorial Lecture, UCSF Department of Radiology, April 17, 2019. "Machine Learning and Artificial Intelligence in Musculoskeletal Imaging".

**VII. Other Presentations and Exhibits (2 Total)**

1. **Beaulieu CF**, Niemayer GL, Lee S. “Flythrough: a Virtual Voyage through the Human Body” Museum Exhibit. Iris & B. Gerald Cantor Center for Visual Arts. Stanford University. 7/14/99-9/15/99.
2. **Beaulieu CF**, Niemayer GL, Lee S. “Virtual Colonoscopy” Museum Exhibit in the Life Sciences Curiosity Corner, Tech Museum of Innovation. San Jose, CA. Permanent Exhibit, Opened 5/00.

**Research/Grants**

**I. Current Grant Support**

None

**II. Pending Grant Support**

None

**III. Previously Submitted Grants**

**PI:** Christopher Beaulieu, M.D., Ph.D., Daniel Rubin, M.D. **Dates:** Submitted 6/2009

National Institutes of Health, Challenge Grant

**Title:** Radiological Decision Support Using Similar Case Ranking

**Role:** Principal Investigator, 30% salary support requested. (Co-P.I. Daniel Rubin, MD, MS)

**Status:** Priority Score 31, 29th percentile. Resubmission pending 3/5/10

**PI:** Sandy Napel, Ph.D.

**Dates:** Submitted 3/2009

National Institutes of Health

**Title:** Content-based Retrieval of Medical Images

**Role:** Co-Investigator, 15% (Sandy Napel, P.I.)

**Status:** Not funded

**PI:** Christopher Beaulieu, M.D., Ph.D., Daniel Rubin, M.D.

**Dates:** Submitted 3/5/2010

R01 CA109089 National Institutes of Health, Revision 1

**Title:** Radiological Decision Support Using Similar Case Ranking

**Role:** Principal Investigator, 30% salary support requested. (Co-P.I. Daniel Rubin, MD, MS)

**Period Covered:** For review 6/5/10, Score 29, 27th percentile

Christopher F. Beaulieu, M.D., Ph.D.

**PI:** Christopher Beaulieu, M.D., Ph.D., Daniel Rubin, M.D.      **Dates:** Submitted 10/5/2010

1R01CA160260 National Institutes of Health

**Title:** Computational Methods for Radiology Discovery and Decision Support for Liver CT

**Role:** Principal Investigator, 30% salary support requested. (Co-P.I. Daniel Rubin, M.D., MS)

**Status:** Not reviewed – NIH ruled this did not qualify as a new proposal

**PI:** Christopher Beaulieu, M.D., Ph.D., Daniel Rubin, MD, MS      **Dates:** Submitted 2/2011

National Institutes of Health R21 PAR-09-219

**Title:** Computational Methods and Resource for CT Liver Lesion Diagnosis and Discovery

**Role:** Principal Investigator, 5% salary support requested. (Co-P.I. Daniel Rubin, MD, MS)

**Status:** Review pending 6/2011.

**PI:** Christopher Beaulieu, M.D., Ph.D.,      **Dates:** Submitted 10/2011

National Institutes of Health R21 EB014370-01A1

**Title:** Tools for Efficient Capture of Image Features to Enable Radiological Discovery

**Role:** Principal Investigator, 5% salary support requested. (Co-P.I. Daniel Rubin, MD, MS)

**Status:** Reviewed 2/28/2012, Priority Score 38, not funded.

**PI:** Nishita Kothary, M.D.      **Dates:** Submitted 10/2011

National Institutes of Health 1 R21 CA169310-01

**Title:** Development of predictive models of vascular invasion in hepatocellular carcinoma

**Role:** Co-investigator, 2% support

**Status:** Reviewed 02/09/2012. Status: Triaged

**PI:** Beaulieu/Rubin      **Dates:** Submitted 7/2012

National Science Foundation 12-499; 01/01/13-12/31/15

**Title:** BIGDATA:Small:DCM:DA: Transforming imaging data into knowledge: Tools and scalable resource

**Role:** Co-PI with Daniel Rubin, MD.

**Goal:** The goal of this project is to develop informatics methods to manage and mine a large

collection of radiology images for biomedical discovery.

**Status:** Not funded.

#### IV. Prior Funding

**PI:** Brian Hargreaves, Ph.D.

**Dates:** 7/1/14-6/30/18

National Institutes of Health R01 EB017739

**Title:** Comprehensive MRI near total joint replacements

This project seeks to make routine MRI available for patients with total hip replacements and total knee replacements, including fast, high-resolution imaging and temperature mapping.

**Role:** Co-investigator

**Salary Support:** 4% during grant period

**PI:** Christopher Beaulieu, MD, PhD

**Dates:** 4/1/18-3/31/19

Philips Healthcare-Stanford Collaboration, \$211,405 total funding

**Title:** Precision Diagnosis of Bone Tumors on Radiography Using Bayesian Modeling of Radiological Observations Derived from Quantitative Image Analysis

**Role:** PI with Co-PI Bao H. Do, MD

**Salary Support:** 10%

Society of Gastrointestinal Radiology

**Dates:** 1/1/96-12/31/96

**Title:** Three-Dimensional CT (Virtual) Colonoscopy.

**Role:** Co-investigator

**Goal:** To evaluate CT acquisition techniques and develop computer graphics methods for the detection of colorectal polyps.

**PI:** Christopher Beaulieu, M.D., Ph.D

**Dates:** 7/1/97-6/30/99

Radiological Society of North America

**Title:** RSNA Scholars Career Development Award: Evaluation of Volume CT Data with Sliding Slab Volume Rendering: Applications to Three-Dimensional CT Colonography.

**Role:** Principal Investigator

**Goal:** To develop and evaluate advanced computer graphics methods and digital synthetic polyps as applied to CT colonography.

Christopher F. Beaulieu, M.D., Ph.D.

**PI:** Gabrielle Bergman, M.D.

**Dates:** 1/1/98-12/31/2000

Genzyme Corporation, Cambridge, MA

**Title:** A Pilot Study; Using MRI to Correlate Subchondral Bone Edema with Clinical Outcomes in Patients treated with Autologous Cultured Chondrocyte

**Role:** Co-investigator

**Goal:** To evaluate knee cartilage repair with autologous chondrocyte transplants using advanced MRI methods.

**PI:** Brooke Jeffrey, M.D.

**Dates:** 7/1/96-6/30/2000

National Institutes of Health RO1CA72023

**Title:** Three Dimensional Spiral CT Colonography

**Role:** Co-investigator

**Goal:** To develop and validate a new technique for evaluating the human colon for the presence or absence of polyps.

**PI:** Christopher Beaulieu, M.D., Ph.D

**Dates:** 9/1/01 – 3/31/02

Stanford Office of Technology Licensing

**Title:** Portable Display of Medical Images on Personal Digital Assistant Devices

**Role:** Principal Investigator.

**Total direct costs for project duration:** \$25,000.

**Goal:** To develop software for image transfer and display from PACS to handheld computers.

**PI:** Albert Macovski, Ph.D., Garry E. Gold, M.D.

**Dates:** 9/1/99-8/31/2002

National Institutes of Health R01AR46904

**Title:** Development of Improved MRI Techniques for Cartilage Injury and Repair

**Role:** Investigator, 15% salary support

**Direct costs for {current year}/4-year period:** {\$250,000}/\$750,000.

**Goal:** To develop and apply new MRI pulse sequences for detection and grading of articular cartilage abnormalities

Christopher F. Beaulieu, M.D., Ph.D.

**PI:** Christopher Beaulieu, M.D., Ph.D, Carlo Tomasi, Ph.D.      **Dates:** 11/1/2000-10/31/2002.

Stanford University Bio-X Interdisciplinary Initiative

**Title:** Detection of Anomalous Structures in Medical Images.

**Role:** Principal Investigator, 5% salary support. Initial P.I., Carlo Tomasi, Ph.D., Computer Science,

**Direct costs:** for current year \$91,135.

**Goal:** To develop new computer algorithms for detection of lesions in the liver and lungs from medical imaging data. Sandy Napel, Ph.D. co-investigator.

**PI:** Christopher Beaulieu, M.D., Ph.D.

**Dates:** 7/1/2000-6/30/2004.

National Institutes of Health RO1CA72023

**Title:** Three Dimensional Spiral CT Colonography

**Role:** Principal Investigator

**Direct/Indirect Costs (4 years):** \$1,653,678/\$2,500,751

**Goal:** To develop computer aided detection and advanced computer graphics methods for evaluation of colorectal polyps imaged with CT colonography, (Virtual Colonoscopy).

**PI:** Christopher Beaulieu, M.D., Ph.D, Geoffrey D. Rubin, M.D.      **Dates:** 1/1/99-11/30/2005

National Institutes of Health RO1 HL58915

**Title:** Volumetric Analysis of the Aorta and its Branches.

**Role:** Co-investigator

**Goal:** To develop and validate a method of volumetric analysis that enables quantification of cross-section areas of blood vessels, path lengths, radii of curvature, and branch angulation as well as mural plaque/thrombus characteristics such as volume, percent calcification, and irregularity in and around the aorta.

**PI:** Christopher Beaulieu, M.D., Ph.D.

**Dates:** 7/1/2004-6/30/2009

National Institutes of Health RO1CA72023

**Title:** Three Dimensional Spiral CT Colonography

**Role:** Principal Investigator

**Direct/Indirect Costs (5 year period):** \$1,549,031/\$2,155,700

**Goal:** To develop computer aided detection and advanced computer graphics methods for evaluation of colorectal polyps imaged with CT colonography, (Virtual Colonoscopy).

Christopher F. Beaulieu, M.D., Ph.D.

**PI:** Genovese, Mark **Dates:** Ended: 12/31/2011

Stryker Biotech Protocol 09-OA-002, SPO # 51950, PDRF#: 7658

**Title:** An Open Label, Safety Extension Study of Repeat Dosing with Intraarticular Bone Morphogenetic Protein (BMP-7) in Subjects with Osteoarthritis of the Knee

Administering Dept: Med/Immunology & Rheumatology

**Role:** Participating Faculty Member

**Salary Support:** 1%

**PI:** Gary Glazer, M.D. **Dates:** 2/01/93 - 2/28/2013

National Institutes of Health T32 CA009695

**Title:** Advanced Techniques in Cancer Imaging and Detection

**Role:** Preceptor

**Salary Support:** None

**PI:** Norbert Pelc, M.D. **Dates:** 9/1/10 – 8/31/15

NIH T32 EB009653

**Title:** Pre-doctoral Training in Biomedical Imaging at Stanford University

**Role:** Preceptor

**Salary Support:** None

**PI:** Christopher F. Beaulieu, M.D., Ph.D. **Dates:** 2/8/2012-6/30/2012

GE Destination digital HCIT Imaging Solutions

**Title:** Multimedia Radiology Report. Protocol Number 119-01-2011-GES-0001

**Role:** Principal Investigator, Total budget: \$26,768

**Salary Support:** 2% during grant period

**PI:** Garry E. Gold, M.D. **Dates:** 6/1/10-4/01/14

National Institutes of Health R01 EB002524

**Title:** Rapid MRI for Evaluation of Osteoarthritis

**Role:** Investigator

**Salary Support:** 4% during grant period

US Patents

1. **Beaulieu CF**, Gold GE, Yun AJ, Paik DS. Portable Viewing of Medical Images using Handheld Computers. S00-009/US 09/954,134, filed 9/12/01. Publication # US 2002/0091659 A1; Publication Date - 7/11/02.
2. Paik DS, Napel S, Rubin GD, **Beaulieu CF**. Method For Characterizing Shapes In Medical Images, Patent S01-075/US filed May 3, 2002. US 7,043,064 issued 5/9/06.
3. Paik DS, Rubin GD, **Beaulieu CF**, Napel S, Jeffrey RB. Method For Detecting Shapes In Medical Images, Patent S01-081/US filed May 3, 2002. Publication # US 2002/0164061 A1; Publication Date - 11/7/02
4. Acar B, **Beaulieu CF**, Napel S, Jeffrey RB, Paik DS. Method for matching and registering medical image data, Patent S01-253/ US filed Sep. 26, 2003. US 7,224,827 issued 5/29/07.
5. Acar B, **Beaulieu CF**, Napel S, Jeffrey RB, Paik DS, Gokturk SB, Tomasi C. Method for detecting and classifying a structure of interest in medical images, Patent S01-254/ US filed Sep. 30, 2003. US 7,272,251 issued 9/18/07.
6. Gokturk SB, Tomasi C, Acar B, **Beaulieu CF**, Napel S, Paik DS. Three-dimensional pattern recognition method to detect shapes in medical images, Patent S01-264/ US filed Sep. 30, 2003. US 7,346,209 issued 3/18/08.
7. Acar B, **Beaulieu CF**, Napel S, Paik DS. 3D Flow Based Methods for Computer Aided Detection, PROV/S02-212/US filed Dec. 3, 2003.
8. Samara Y, Mathew PP, Yeluri V, Lau DW, Stoval III WM, **Beaulieu CF**. Image data navigation method and apparatus. US filed Febuary 14, 2003. US 7,212,661 issued 5/1/07.
9. Sundaram P, Paik DS, Sifakis E, **Beaulieu CF**, Fedkiw R, Napel SA. "Selective fold removal in medical Images." US filed 10/15/04. Publication # US 2008/0089569 A1; Publication Date – 4/17/2008
10. Paik DS, Sundaram P, **Beaulieu CF**, Napel SA. "Polyp Identification Through Subtraction of Model of Medical Images." US filed 11/8/05. US 7,616,800 issued on 11/10/2009.
11. Lau DW, Samara Y, Yeluri V, Frederick PS, **Beaulieu CF**, Barth RA, Gold GE, Paik DS, Raman R, Roehm SP, Herfkens RJ. "System and Method for Anatomy Labeling on PACS." US filed 11/14/05. US 7,590,440 issued 9/15/09.
12. Sundaram P, Zomorodian A, **Beaulieu CF**, Napel S. Polyp Detection Using Smoothed Shape Operators," (8,055,047) issued 11/8/2011.