SERENA BONARETTI
Curriculum Vitae

PERSONAL INFORMATION

Current positions	Senior researcher at Balgrist Campus, Zürich, Switzerland
Email Address	serena.bonaretti.research@gmail.com
Webpage	https://sbonaretti.github.io/
GitHub	https://github.com/sbonaretti/
Google Scholar	https://scholar.google.com/citations?hl=en&user=V-S_V6sAAAAJ
ORCID	https://orcid.org/0000-0003-4264-1773
YouTube	https://www.youtube.com/channel/UCk1sLroo_tgJqcn-0EVh6zQ
Twitter	@SerenaBonaretti

EMPLOYMENT

10.2022 – present	Senior researcher at Balgrist Campus, Zürich, Switzerland
08.2020 – 09.2022	Independent Teacher, C as in Coding (sole proprietorship), Maastricht, The Netherlands
10.2019 – 09.2022	Independent Research Scientist, Transparent MSK Research (sole proprietorship), Maastricht, The Netherlands
03.2019 – 08.2019	Research Scientist, Department of Bioinformatics, Maastricht University, The Netherlands Projects: *NanoSolveIT* and *RiskGONE* (Engineered nanomaterial toxicology) Advisor: Egon Willighagen
01.2016 – 07.2018	Physical Science Research Specialist, Department of Radiology, Stanford University, USA Research Biomedical Engineer, Department of Veterans Affairs, Palo Alto, USA Projects: *Automatic segmentation of MR images of the knee* and *Weight-bearing imaging of the knee using C-arm CT* Advisors: Gary Beaupre and Garry Gold
01.2015 – 12.2015	Associate Specialist, Department of Radiology and Biomedical Imaging, University of California, San Francisco, USA Project: *Standardization of acquisition procedure for bone imaging for multicenter clinical research* Advisors: Thomas Lang and Andrew Burghardt
11.2005 – 11.2007	Clinical Engineer, Department of Audiology, Fondazione Audiologica Varese ONLUS, Ospedale di Circolo - Fondazione Macchi, Varese, Italy Role: Responsible of the department instrumentation and support for scientific activities Advisor: Sandro Burdo
04.2005 – 10.2005	Research Assistant, Institute of Biomedical Engineering - Italian National Research Council (ISIB-CNR), Politecnico di Milano, Italy Project: *Segmentation of mandibular nerve from CT images* Advisors: Gabriella Tognola and Paolo Ravazzani
05.2003 – 07.2003	Research Assistant, Institute of Biomedical Engineering - Italian National Research Council (ISIB-CNR), Politecnico di Milano, Italy Project: *Segmentation of brain image for electromagnetic field estimation* Advisors: Paolo Ravazzani and Marta Parazzini

EDUCATION

03.2012 – 12.2014	Postdoctoral Scholar, Department of Radiology and Biomedical Imaging, University of California, San Francisco, USA Project: *Standardization of acquisition procedure for bone imaging for multicenter clinical research* Advisors: Thomas Lang and Andrew Burghardt
12.2007 – 01.2012	PhD in Biomedical Engineering, Institute for Surgical Technology and Biomechanics, University of Bern, Switzerland Thesis: *Statistical Models of Shape and Density for Population-based Analysis of Bone Mechanics with Applications to Fracture Risk Assessment and Implant Design* Advisors: Mauricio Reyes and Philippe Büchler
10.2003 – 10.2005	MSc in Biomedical Engineering, Politecnico di Milano, Italy Thesis: *Methods for 2D and 3D segmentation and rendering of CT images: Validation and application in maxillofacial surgery* (in Italian) Advisors: Gabriella Tognola and Paolo Ravazzani
10.2000 – 10.2003	BSc in Biomedical Engineering, Politecnico di Milano, Italy Advisor: Paolo Ravazzani

OPEN-SOURCE SOFTWARE

Developed

1. *pyKNEEr*
   An image analysis workflow for open and reproducible research on femoral knee cartilage
   (GitHub repository, documentation, video)
   Programming language: Python with Jupyter Notebook
2. *SAMforFEM*
   Statistical appearance model (SAM) of femur for finite element (FE) simulations of different populations
   (GitHub repository, documentation)
   Programming language: C++, with ITK, VTK, and Qt

Supervised

1. *Reference line - Training & evaluation*
   A web application to train and evaluate operators when scanning with High Resolution Peripheral Quantitative Computed Tomography (HR-pQCT).
   Student: Caroline Mai Chan, University of California, San Francisco, USA.
   (Web application, GitHub repository, documentation)
   Programming language: HTML with CSS, Javascript
2. *FEM assigner*
   Assigning bone material properties to finite element (FE) meshes from quantitative computed tomography images
   Student: Andreas Siegrist, University of Bern, Switzerland.
   (GitHub repository, documentation)
   Programming language: C++, with ITK, VTK, and Qt

COMMUNITY SERVICE

12.2019 – present	Leading the creation of the Open and Reproducible MSK Imaging Research (ORMIR) community (https://ormircommunity.github.io/, previously called Jupyter Community in Musculoskeletal Imaging Research)

EXTERNAL FUNDING

07.2022	*Development of an open-source reference data set, image repository, and interactive training tool for bone damage assessment in inflammatory arthritis*. Role: Co-Applicant. Funder: Canadian Institutes of Health Research (Canada)
01.2020	*Building the Jupyter Community in Musculoskeletal Imaging Research* Role: Main applicant. Funder: NumFOCUS (USA)
01.2020	*Exploration of SPECTRA image metadata for database development* Role: Contractor. Funder: SPECTRA (Canada)

IN-CLASS TEACHING

11.2017	Guest Lecturer, Surgery Without All the Blood (RAD 70N), Stanford University, USA *Introduction to Interventional Radiology at the Zeego Lab* (Laboratory)
04.2017 – 06.2017	Co-instructor (50%), Orthopaedic Bioengineering (BIOE/ME 381), Stanford University, USA *Bone anatomy and physiology*, *bone mechanics at the organ level*, *bone mechanics at the tissue level*, *principles of X-ray imaging*, *bone imaging*, *and bone quality, fracture, and fixation* (Lectures). Bone fixation (Laboratory)
01.2017, 01.2018	Guest Lecturer, Clinical Needs and Technology (BIOE 301B), Stanford University, USA *Introduction to X-ray-based Imaging* (Lecture) *Minimally Invasive Therapies in Swine* (Laboratory)
10.2016	Guest Lecturer, Introduction to Bioengineering Research (BIOE 390/MED 289), Stanford University, USA *Weight-bearing Imaging of the Knee Using C-arm CT* (Lecture)
03.2015	Guest Lecturer, Image Processing and Analysis II (BI 265), University of California San Francisco, USA *Active Shape and Appearance Modeling in Medical Imaging* (Blackboard lecture)
01.2014, 01.2015	Guest Lecturer, Musculoskeletal Imaging (BI 240), University of California San Francisco, USA *Assessment of Bone Strength - Foundations of FE and microFE* (Blackboard lecture)
12.2009	Guest Lecturer, Medical Image Analysis, ETH Zürich, Switzerland *Statistical Shape Models* (Lecture)
10.2009	Guest Lecturer, Medical Image Analysis, University of Bern, Switzerland *Statistical Shape Models* (Lecture)

ONE-TO-ONE TEACHING

08.2020 – 09.2022	Teaching coding and computational thinking. Supporting for university exam and projects. Student reviews here.

ONLINE TEACHING

12.2019 – present	YouTube channel with basics and hands-on tutorials on Open and Reproducible Research. Playlists with videos I created: Transparent Research 101, Jupyter Notebook and Python for Scientists, Step-by-step Tutorials for Transparent Research, and Medical Image Analysis Playlist with videos I collect: Coding Women

MENTORING

02.2022 – 07.2022	Ranjan Mishra, B.Sc thesis. *Conformal prediction for OAI biomarkers*. University College Maastricht, The Netherlands. Co-supervisor: Christof Seiler
03.2017 – 02.2018	Fatih Chengiz, M.Sc. thesis. *Automatic segmentation of the meniscus from MR images*. University of Erlangen-Nuremberg, Germany. Co-supervisor: Andreas Meier

06.2016 – 08.2016	Alyssa Hobson and Sandra Ortellado, Summer student project. *Segmentation of knee bones from weight-bearing cone-beam computed tomography images*. Stanford University, USA. Co-supervisors: Members of the Garry Gold's and Marc Levenston's labs
06.2016 – 08.2016	Francisco Lopez and Heidi Poppe, Summer student project. *Subject's support platform for weight-bearing cone-beam computed tomography imaging*. Stanford University, USA. Co-supervisors: Members of the Garry Gold's and Marc Levenston's labs
05.2015 – 12.2015	Caroline Mai Chan. Development of webapp: Reference line – Training and Evaluation. University of California San Francisco, USA. Co-supervisor: Andrew Burghardt
06.2014 – 12.2015	Andrew Yu, Internship. *Data management for the MrOS project*. University of California San Francisco, USA. Co-supervisor: Andrew Burghardt
09.2010 – 03.2011	Saloni Soin, M.Sc. thesis. *Preformed cranial implants*, University of Bern, Switzerland. Co-supervisor: Mauricio Reyes
11.2009 – 10.2010	Andreas Siegrist, B.Sc. thesis on Bone material property assignment for finite element analysis, Fachhochschule Nordwestschweiz Biel and University of Bern, Switzerland. Co-supervisor: Mauricio Reyes and Benedikt Helgason

TEACHING WORKSHOPS

09.06.2022	*Introduction to the Jupyter ecosystem and Python* Jupyter Community Workshop: Building the Jupyter Community in MSK Imaging. Maastricht, The Netherlands
10.06.2022	*Open and reproducible second layer analysis using Jupyter Notebook and Python* Jupyter Community Workshop: Building the Jupyter Community in MSK Imaging. Maastricht, The Netherlands
22.01.2020	*Python and Jupyter Notebook for Medical Image Analysis* OpenMR Benelux, Nijmegen, The Netherlands
25.02.2019	*Hands-on transparent QMSKI: Open-access data, reproducible workflows, and interactive publications* 22nd International Workshop on Quantitative Musculoskeletal Imaging (QMSKI), Chateau Lake Louise, AB, Canada. (Presentation)

INVITED TALKS

10.11.2022 (coming)	*Open and reproducible coding: Perspective of an MSK imaging researcher* University of Basel, Switzerland
10.05.2022	*Open Science: Perspective of a researcher who codes* The Reproducibility Crisis – Perspectives from Funders, Researchers, and Journal Editors, Workshop at the International Society for Magnetic Resonance in Medicine (ISMRM) Conference. London, United Kingdom
14.03.2022	*Within the data life cycle: Perspective of an MSK imaging researcher* Informatics Institute, University of Amsterdam. Amsterdam, The Netherlands
13.12.2021	*Debate: Open Science in the MR Community* (video) MRI Together – A Global Workshop on Open Science and Reproducible Research. Virtual
12.11.2021	*Development of a centralized metadata and data syndication platform for SPECTRA* SPECTRA 2021 Virtual Workshop. Virtual
02.07.2021	*Open data: Perspective of an MSK researcher who codes* (video) Panel discussion "The Open Data Paradigm", The International Workshop on Osteoarthritis Imaging. Rotterdam, The Netherlands
11.07.2020	*Why we should use Jupyter notebook in Medical Image Analysis* (video) Think Open Rovereto Workshop. Trento University, Italy (Virtual)

26.09.2019	*Transparent Quantitative Musculoskeletal Imaging* Department of Mechanical Engineering, Division of Biomechanics, KU Leuven. Leuven, Belgium.
12.09.2019	*Transparent Research: Open-Access Data, Reproducible Workflows, and Interactive Publications* 7th Annual Tomography for Scientific Advancement (ToScA) Symposium. Southampton, United Kingdom.
20.06.2019	*Transparent Quantitative Musculoskeletal Imaging* Department of Radiology, Erasmus Medical Center. Rotterdam, The Netherlands.
02.05.2019	*Data Management for Transparent Research* BiGCaT Science Café, Maastricht University. Maastricht, The Netherlands.
18.04.2019	*Transparent Research: Open-Access Data, Reproducible Workflows, and Interactive Publications* BiGCaT Science Café. Maastricht University. Maastricht, The Netherlands.
22.12.2015	*Bone quality by QCT and HR-pQCT: Translation to multicenter clinical research* Istituti Ortopedici Rizzoli. Bologna, Italy
16.12.2015	*Bone quality by QCT and HR-pQCT: Translation to multicenter clinical research* Pattern Recognition Lab, University of Erlangen-Nuremberg. Erlangen, Germany
16.09.2014	*Intra- and inter-operator variability in HR-pQCT scan positioning* 2nd XtremeCT User Meeting, workshop at the American Society for Bone and Mineral Research (ASBMR) conference. Houston, TX, USA

CHAIRING AND ORGANIZING WORKSHOPS AND CONFERENCES

13.06.2022	*Introducing the Open and Reproducible Musculoskeletal Imaging Research (ORMIR) community*. Workshop at the 23rd International Workshop on Quantitative Musculoskeletal Imaging (QMSKI). Noordwijk, The Netherlands Role: Chair, co-organizer, and presenter
9-11.06.2022	*Jupyter Community Workshop: Building the Jupyter Community in MSK Imaging*. Maastricht, The Netherlands Role: Chair, organizer, and lecturer
25.02.2019	*Hands-on transparent QMSKI: Open-access data, reproducible workflows, and interactive publications*. Workshop at the 22nd International Workshop on Quantitative Musculoskeletal Imaging (QMSKI), Chateau Lake Louise, AB, Canada Role: Chair, organizer, and presenter
6-9.07.2008	*16th Congress of the European Society of Biomechanics*. Lucerne, Switzerland Role: Staff member
9-12.05.2007	*Objective Measures in Cochlear and Brainstem Implants – 5th International Symposium and Related Additional Events*. Varese, Italy Role: Organizing committee and staff member

AWARDS

10.2014	Young Investigator Award, poster presentation, second author, American Society for Bone Mineral Research

UNIVERSITY SERVICE (without remuneration)

11.2016 – 07.2018	Associate Director of the Zeego Laboratory, Department of Radiology, Stanford University, USA
01.2016 – 07.2018	Creation and maintenance of the JOINT group webpage and of the Zeego Lab webpage, Stanford University, USA
01.2015 – 12.2015	Contribution to the Musculoskeletal CT Imaging Research Group webpage, University of California San Francisco, USA

01.2010 – 12.2011 Contribution to the Institute for Surgical Technology and Biomechanics webpage, University of Bern, Switzerland

SCIENTIFIC REVIEWING ACTIVITIES

Grant reviewer

2015 – 2016 American Society for Bone and Mineral Research

Journal reviewer

2016 – present Physica Medica
2016 – present Biomechanics and Modeling in Mechanobiology
2015 – present Journal of Computer Methods in Biomechanics and Biomedical Engineering
2014 – present Journal of Bone and Mineral Research
2014 – present Journal of Medical Imaging and Health Informatics
2014 – present Bone
2013 – present Journal of Biomechanics
2013 – present Medical Physics
2011 – present IEEE - Transaction on Medical Imaging

MEMBERSHIPS IN SCIENTIFIC SOCIETIES

2016 - 2017 International Society for Magnetic Resonance in Medicine
2016 - 2017 Osteoarthritis Research Society International
2012 - 2015 American Society of Bone and Mineral Research
2008 - 2010 European Society of Biomechanics

BOOK

1. Bonaretti S. Learn Python with Jupyter. 2022. (completion expected in 2023)

NON-ACADEMIC WRITING

1. Bonaretti S., Cameron D., Kuczynski M., Iori G., on behalf of the participants to the workshop. Report on the Jupyter Community Workshop "Building the Jupyter Community in Musculoskeletal Imaging Research". 30 November 2022. Blogpost on medium.com

PUBLICATIONS IN PEER-REVIEWED SCIENTIFIC JOURNALS

1. Ammar, A.; Bonaretti, S.*; Winckers, L.; Quik, J.; Bakker, M.; Maier, D.; Lynch, I.; van Rijn, J.; Willighagen, E. A Semi-Automated Workflow for FAIR Maturity Indicators in the Life Sciences. Nanomaterials, 10, 2068. 2020. (*co-first author).
2. Bonaretti S., Gold G.E., Beaupre G.E. *pyKNEEr*: An Image Analysis Workflow for Open and Reproducible Research on Femoral Knee Cartilage. PLoS ONE 15(1): e0226501. 2020.
3. Pang E.Q., Coughlan M., Bonaretti S., Finlay A., Bellino M., Bishop J., Gardner M.J. Assessment of Open Syndesmosis Reduction Techniques in an Unbroken Fibula Model: Visualization vs. Palpation. J. Orthop Trauma. 2018.
4. Maier J., Black M., Bonaretti S., Bier B., Eskofier B., Choi J.H. Levenston M., Gold G., Fahrig R., Maier A. Comparison of Different Approaches for Measuring Tibial Cartilage Thickness. J Integr Bioinform. 14(2),1-10. 2017.
5. Bonaretti S., Vilayphiou N., Chan C. M., Yu A., Nishiyama K., Liu D., Boutroy S., Ghasem-Zadeh A., Boyd S.K., Chapurlat R., McKay H., Shane E., Bouxsein M.L., Black D.M., Majumdar S., Orwoll E.S., Lang T.F., Khosla S., Burghardt A.J. Operator variability In Scan Positioning is a Major Component of HR-pQCT Precision Error and is Reduced by Standardized Training. Osteoporos Int. 28(1), 245-257. 2017.
6. Bonaretti S., Holets M., Majumdar S., Lang T.F., Khosla S., Burghardt A.J. The Comparability of HR-pQCT Bone Quality Measures is Improved by Scanning Anatomically Standardized Regions. Osteoporos Int. 28(7), 2115-2128. 2017.

7. Carballido-Gamio J., Bonaretti S., Kazakia G.J., Khosla S., Majumdar S., Lang T.F., Burghardt A.J. Statistical Parametric Mapping of HR-pQCT Images: A Tool for Population-Based Comparison of Micro-Scale Bone Features. Ann Biomed Eng. 45(5), 949-962. 2017.
8. Ghasem-Zadeh A., Burghardt A.J., Wang X.F., Iuliano S., Bonaretti S., Bui Q.M., Zebaze R., Seeman E. Quantifying Sex, Race and Age Specific Differences in Bone Microstructure Requires Measurement of Anatomically Equivalent Regions. Bone. 101, 206-213. 2017.
9. Carballido-Gamio J., Bonaretti S., Saeed I., Harnish R., Recker R., Burghardt A.J., Keyak J.H., Harris T., Khosla S., Lang T.F. Automatic Multi-Parametric Quantification of the Proximal Femur with QCT. Quant Imaging in Med and Surg. 5(4), 552-568. 2015.
10. Bonaretti S., Carpenter D.R., Saeed I., Burghardt A.J., Yu L., Bruesewitz M., Khosla S., Lang T. Novel Anthropomorphic Hip Phantom Corrects Systemic Interscanner Differences in Proximal Femoral vBMD. Phys Med Biol. 59, 7819-7834. 2014.
11. Carpenter R.D., Saeed I Bonaretti S., Schreck C., Keyak J.H., Streeper T., Harris T.B., Lang T.F. Inter-scanner Differences in In Vivo QCT Measurements of the Density and Strength of the Proximal Femur Remain After Correction with Anthropomorphic Standardization Phantoms. Med Eng Phys. 36, 1225-1232. 2014.
12. Bonaretti S., Seiler C., Boichon C., Reyes M., Büchler P. Image-based vs. Mesh-based Statistical Appearance Model of the Human Femur: Implications for Finite Element Simulations. Med Eng Phys. 36, 1626-1625. 2014.
13. Kistler M., Bonaretti S., Pfahrer M., Niklaus R., Büchler P. The Virtual Skeleton Database: An Open Access Repository for Biomedical Research and Collaboration. J Med Internet Res. 12;15(11):e245. 2013.
14. Schulz A.P., Reimers N., Wipf F., Vallotton M., Bonaretti S., Kozic N., Reyes M., Kienast B.J. Evidence Based Development of a Novel Lateral Fibula Plate (VariAx Fibula) Using a Real CT Bone Data Based Optimization Process During Device Development. Open Orthop J. 6,1-7. 2012.

PEER-REVIEWED CONFERENCE PAPERS

1. Kistler M., Bonaretti S., Boichon C., Rochette M., Büchler P. **Methods to Accelerate Finite Element Calculations in Biomechanics Using a Statistical Database of Pre-Calculated Simulations.** 10th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering. 11-14 April 2012. Berlin, Germany.
2. Bonaretti S., Seiler C., Boichon C., Büchler P., Reyes M***. Mesh-based vs. Image-based Statistical Model of Appearance of the Human Femur: A Preliminary Comparison Study for the Creation of Finite Element Meshes.*** Mesh Processing in Medical Image Analysis - MICCAI 2011 workshop. 18 September 2011. Toronto, Canada.
3. Bonaretti S., Helgason B., Seiler C., Reyes M., Büchler P. **Combined Statistical Model of Bone Shape and Mechanical Properties for Bone Modelling.** 9th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering. 24-27 February 2010. Valencia, Spain.
4. Bonaretti S., Reimers N., Reyes M., Nikitsin A., Joensson A., Nolte L., Büchler P. **Assessment of Peri-Articular Implant Fitting Based on Statistical Finite Element Modelling.** Computational Biomechanics for Medicine III – MICCAI 2008 workshop. 10 September 2008. New York, NY, USA.

CONFERENCE ABSTRACTS

1. Sahu P., Greer T. H., Xu Z., Shen Z., Bonaretti S., McCormick M., Neithammer M. **Reproducible Workflow for Visualization and Analysis of OsteoArthritis Abnormality Progression**. 23nd International Workshop on Quantitative Musculoskeletal Imaging. 13-17 June 2022. Noordwijk, The Netherlands.
2. Bonaretti S., Gold G., Beaupre G. **pyKNEEr: Reproducible Workflow for Automatic Segmentation and Analysis of Femoral Knee Cartilage.** 22nd International Workshop on Quantitative Musculoskeletal Imaging. 24 February - 1 March 2019. Chateau Lake Louise, Canada.
3. Maier J., Aichert A., Mehringer W., Bier B., Eskofier B., Levenston M., Gold G., Fahrig R., Bonaretti S., Maier A. **Feasibility of Motion Compensation using Intertial Measurements in C-arm CT. IEEE Nuclear Science Symposium & Medical Imaging Conference.** 10-17 November 2018. Sydney, Australia.
4. Bier B., Berger M., Maier J., Unberath M., Hsieh S., Bonaretti S., Fahrig R., Levenston M., Gold G., Maier A. **Object Removal in Gradient Domain of Cone-Beam CT Projections.** IEEE Nuclear Science Symposium & Medical Imaging Conference. 29 October – 5 November 2016. Strasbourg, France.

5. Bonaretti S., Carballido-Gamio J., Keyak J., Saeed I., Yu L., Bruesewitz M., Burghardt A.J., Khosla S., Lang T.F. **QCT Intra- and Inter-Scanner Precision in Estimation of Proximal Femur Strength**. American Society for Bone and Mineral Research. 9-12 October 2015. Seattle, WA, USA.
6. Bonaretti S., Vilayphiou N., Yu A., Holets M., Nishiyama K., Liu D., Boutroy S., Ghasem-Zadeh A., Boyd S.K., Chapurlat R., McKey H., Shane E., Bouxein M.L., Lang T.F., Khosla S., Cawton P.M., Black D.M., Majumdar S., Orwoll E.S., Burghardt A.J. **Standardized Training For HR-pQCT Scan Positioning Reduces Inter-Operator Precision Errors: The MrOs Multicenter Study Experience.** American Society for Bone and Mineral Research. 9-12 October 2015. Seattle, WA, USA.
7. Bonaretti S., Holets M., Derrico N.P., Nishiyama K., Liu D., Boutroy S., Raymond D., Ghasem-Zadeh A., Seeman E., Boyd S.K., Chapurlat R., McKay H., Shane E., Bouxsein M.L., Lang T.F., Khosla S., Burghardt A.J. **The Role of Intra- and Inter-Operator Variability in HR-pQCT Precision.** International Bone Densitometric Workshop. 13-17 October 2014. Hong Kong.
8. Carballido-Gamio J., Bonaretti S., Kazakia G.J., Khosla S., Lang T.F., Burghardt A.J**. Population-Based Local Multi-Parametric Comparisons of HR-pQCT Studies.** International Bone Densitometric Workshop. 13-17 October 2014. Hong Kong.
9. Bonaretti S., Holets M., Derrico N.P., Nishiyama K., Liu D., Boutroy S., Chapurlat R., McKay H., Shane E., Bouxsein M., Lang T., Khosla S., Burghardt A.J. **Intra- and Inter-Operator Variability in HR-pQCT Scan Positioning.** American Society for Bone and Mineral Research. 12-15 September 2014. Houston, TX, USA.
10. Bonaretti S., Holets M., Saeed I., McCready L., Lang T., Khosla S., Burghardt A.J. **Comparability of HR-pQCT Bone Quality Measures Improved by Scanning Anatomically Standardized Regions.** American Society for Bone and Mineral Research. 12-15 September 2014. Houston, TX, USA.
11. Carballido-Gamio J., Bonaretti S., Saeed I., Harnish R., Recker R., Burghardt A.J., Keyak J., Harris T., Khosla S., Lang T**. Automatic QCT Quantification of the Proximal Femur: vBMD, Bone Volume, Cortical Bone Thickness and Finite Element Modeling.** American Society for Bone and Mineral Research. 12-15 September 2014. Houston, TX, USA.
12. Ghasem-Zadeh A., Burghardt A.J., Zendeli A., Bonaretti S., Bjornerem A., Wang X.-F., Kazakia G., Zebaze R., Seeman E. **Assessing Age, Sex and Racial Differences in Cortical Porosity Requires Adjustment for Site-Specific Variation in the Selected Region of Interest.** American Society for Bone and Mineral Research. 12-15 September 2014. Houston, TX, USA.
13. Bonaretti S., Saeed I., Burghardt A.J., Yu L., Bruesewitz M., Khosla S., Lang T.F. **Effect of Body Size on the Quantification of Bone Mineral Density from QCT Images Using a Novel Anthropomorphic Hip Phantom.** American Society for Bone and Mineral Research. 4-7 October 2013. Baltimore, MD, USA.
14. Carballido-Gamio J., Bonaretti S., Holets M., Saeed I., McCready L., Majumdar S., Lang T.F., Khosla S., Burghardt A.J. **Automated Scan Prescription For HR-pQCT: A Multi-Atlas Prospective Registration Approach.** American Society for Bone and Mineral Research. 4-7 October 2013. Baltimore, MD, USA.
15. Kistler M., Bonaretti S., de Oliveira M.E., Boichon C., Rochette M., Büchler P. **Statistical Model of Appearance to Accelerate Finite Element Calculations in Biomechanics.** 19th Congress of the European Society of Biomechanics. 1-4 July 2012. Lisbon, Portugal.
16. de Oliveira M.E., Kistler M., Hellmuth, R.A.D, Gerber N., Schumann S., Bonaretti S., Büchler P. **A Consistent Method for Modelling Subject Specific Muscoloskeletal Systems.** 19th Congress of the European Society of Biomechanics. 1-4 July 2012. Lisbon, Portugal.
17. Sigurðardóttir B., Bonaretti S., Örlygsson G., Sigurjónsson Ó.E., Ferguson S.J., Helgason B. **Are Iso-Elastic Femoral Stems Beneficial for Secondary Implant Stability in Cementless THA?** The Annual Meeting of the Swiss Society for Biomedical Engineering. 22 August 2011. Bern, Switzerland.
18. Bonaretti S., Seiler C., Rochette M., Helgason B., Reyes M., Büchler P. **Statistical Finite Element Model for the Virtual Skeleton Database.** NCCR Co-Me Scientific Advisory Board Meeting. 9-10 February 2011. Interlaken, Switzerland.
19. Bonaretti S., Helgason B., Seiler C., Reyes M., Büchler P. **Statistical Finite Element Modeling: Application to Orthopaedic Implant Design.** Graduate School for Cellular and Biomedical Sciences Symposium. 28 January 2011. Bern, Switzerland.

20. Bonaretti S., Seiler C., Reyes M., Büchler P. **Statistical Finite Element Modeling for the Virtual Skeleton Database.** NCCR Co-Me Research Networking Workshop. 26-27 August 2010. Zürich, Switzerland.
21. Bonaretti S., Helgason B., Seiler C., Reyes M., Büchler P. **A Statistical Shape Model of Bone Anatomical Variability for Finite Element Assessment of Bone Mechanics.** 17th Congress of the European Society of Biomechanics. 5-8 July 2010. Edinburgh, UK.
22. Bonaretti S., Seiler C., Helgason B., Reyes M., Büchler P. **Statistical Finite Element Modeling for the Virtual Skeleton Database.** NCCR Co-Me Scientific Advisory Board Meeting. 19-20 February 2010. Winterthur, Switzerland.
23. Bonaretti S., Helgason B., Seiler C., Reyes M., Büchler P. **A Statistical Shape Model of Bone Anatomical Variability for Finite Element Assessment of Bone Mechanics.** Graduate School for Cellular and Biomedical Sciences Symposium. 27 January 2010. Bern, Switzerland.
24. Bonaretti S., Seiler C., Büchler P., Reyes M. **Computing Average Anatomical Images: Comparison between Thin-Plate Spline and Log-Euclidean Approach.** The Annual Meeting of the Swiss Society for Biomedical Engineering. 27-28 August 2009. Bern, Switzerland.
25. Bonaretti S., Büchler P., Reimers N., Schmidt W., Seiler C., Weber S., Reyes M. **Automatic Bone Density Evaluation from CT Images.** Computer Assisted Orthopaedic Surgery. 17-20 June 2009. Boston, MA, USA.
26. Bonaretti S., Nikitsin A., Reimers N., Joensson A., Rueckert D., Reyes M., Büchler P. **Shape and Biomechanical Model for Population-Specific Design of Anatomical Peri-Articular Implants.** CTI Medtech Event. 2 September 2008. Bern, Switzerland.
27. Bonaretti S., Reimers N., Rueckert D., Reyes M., Gonzales-Ballester M.A., Büchler P. **Statistical Finite Element Analysis for Bone Modelling.** 16th Congress of the European Society of Biomechanics. 6-9 July 2008. Lucerne, Switzerland.
28. Bonaretti S., Büchler P., Rueckert D., Reyes M., Gonzáles M.A., **Statistical Finite Element Model for Bone and Implant Modeling.** NCCR Co-Me Scientific Advisory Board Meeting. 14 February 2008. Neuchatel, Switzerland.
29. Brega F., Razza S., Bonaretti S., Burdo S. **Morphological and Functional Correlation Using X-Rays and SOE.** Objective Measures in Cochlear and Brainstem Implants – 5th International Symposium and Related Additional Events. 9-12 May 2007. Varese, Italy.
30. Razza S., Bonaretti S., Burdo S. **Acoustical Signal Check: Microphone Integrity Evaluation Through a Common Hearing Aid Analyzer.** Objective Measures in Cochlear and Brainstem Implants – 5th International Symposium and Related Additional Events. 9-12 May 2007. Varese, Italy.
31. Burdo S., Razza S., Bonaretti S., Bani Alunno M., Tognola G. **Cortical Responses and Age at Cochlear Implant.** Objective Measures in Cochlear and Brainstem Implants – 5th International Symposium and Related Additional Events. 9-12 May 2007. Varese, Italy.