

International Peer-Reviewed Publications (update January 2022)

- Hetzer MW and **Bersini S**, *Beyond Static Pipes: Mechanisms and In Vitro Models of Vascular Aging*, Cold Spring Harb Perspect Med 2022, a041180. doi: 10.1101/cshperspect.a041180
- Cidre-Aranaz F, Li J, ... **Bersini S**, ... Grunewald TGP, *Integrative gene network and functional analyses identify a prognostically relevant key regulator of metastasis in Ewing sarcoma*. Molecular Cancer 2022, 21(1):1. doi: 10.1186/s12943-021-01470-z
- **Bersini S**, Francescato R, Moretti M. *Biofabrication of 3D Human Muscle Model with Vascularization and Endomysium*. Methods Mol Biol 2022, 2373:213-230
- Colombo MV, **Bersini S**, Arrigoni C, Moretti M. *3D Biofabricated In Vitro Models of Vascularized and Mineralized Bone Tissues*. Methods Mol Biol 2022, 2373:283-296
- Gilardi M, **Bersini S**, Valtorta S, Proietto M, Crippa M, Boussommier-Calleja A, Labelle M, Moresco RM, Vanoni M, Kamm RD, Moretti M. *The driving role of the Cdk5/Tln1/FAK S732 axis in cancer cell extravasation dissected by human vascularized microfluidic models*. Biomaterials 2021, 276:120975
- Crippa M*, **Bersini S***, Gilardi M, Arrigoni C, Gamba S, Falanga A, Candrian C, Dubini G, Vanoni M, Moretti M. *A microphysiological early metastatic niche on a chip reveals how heterotypic cell interactions and inhibition of integrin subunit β 3 impact breast cancer cell extravasation*. Lab on a Chip 2021, 21(6):1061-1072
* **equally contributing authors**
- Colombo MV*, **Bersini S***, Arrigoni C, Gilardi M, Sansoni V, Ragni E, Candiani G, Lombardi G, Moretti M. *Engineering the early bone metastatic niche through human vascularized immune bone minitissues*. Biofabrication 2021, doi: 10.1088/1758-5090/abefea
* **equally contributing authors**
- Possenti L, Mecchi L, Rossoni A, Sangalli V, **Bersini S**, Cicchetti A, Costantino ML, Candrian C, Arrigoni C, Rancati T, Moretti M, *Radiobiological Studies of Microvascular Damage through In Vitro Models: A Methodological Perspective*. Cancers 2021, 13(5):1182
- **Bersini S**, Schulte R, Huang L, Tsai H, Hetzer MW. *Direct reprogramming of human smooth muscle and vascular endothelial cells reveals defects associated with aging and Hutchinson-Gilford Progeria Syndrome*. eLife 2020, 9:e54383
Featured on Salk Science News, Technology Networks Cell Science News, MedicalXpress, Genetic Bioengineering & Biotechnology News, CBS 8, KPBS, KOGO News
- **Bersini S**, Arrojo e Drigo R, Huang L, Shokhirev MN, Hetzer MW. *Transcriptional and functional changes of the human microvasculature during physiological aging and Alzheimer Disease*. Advanced Biosystems 2020, 4(5):e2000044. doi: 10.1002/adbi.202000044
- Lopa S, Piraino F, Talò G, Mainardi VL, **Bersini S**, Pierro M, Zagra L, Rasponi M, Moretti M. *Microfluidic biofabrication of 3D multicellular spheroids by modulation of non-geometrical parameters*. Frontiers in Bioengineering and Biotechnology 2020, 8:366. doi: 10.3389/fbioe.2020.00366

- **Bersini S**, Lytle NK, Schulte R, Huang L, Wahl GM, Hetzer MW. *Nup93 regulates breast tumor growth by modulating cell proliferation and actin cytoskeleton remodeling*. Life Science Alliance 2020, 3(1) pii:e201900623. doi: 10.26508/lsa.201900623
- Arrigoni C, Petta D, **Bersini S**, Mironov V, Candrian C, Moretti M. *Engineering complex muscle-tissue interfaces through microfabrication*. Biofabrication 2019, 11(3):032004
- **Bersini S**, Gilardi M, Ugolini S, Sansoni V, Talò G, Perego S, Zanotti S, Ostano P, Mora M, Soncini M, Vanoni M, Lombardi G, Moretti M. *Engineering an environment for the study of fibrosis: A 3D human muscle model with endothelium-specificity and endomysium*. Cell Reports 2018, 25(13):3858-3868
- **Bersini S**, Miermont A, Pavesi A, Kamm RD, Thiery JP, Moretti M, Adriani A. *A combined microfluidic-transcriptomic approach to characterize the extravasation potential of cancer cells*. Oncotarget 2018, 9(90):36110-36125
- **Bersini S**, Gilardi M, Mora M, Krol S, Arrigoni C, Candrian C, Zanotti S, Moretti M. *Tackling muscle fibrosis: From molecular mechanisms to next generation engineered models to predict drug delivery*. Advanced Drug Delivery Reviews 2018, pii: S0169-409X(18)30037-1. doi:10.1016/j.addr.2018.02.009
- Massa S, Sakr MA, Seo J, Bandaru P, Arneri A, **Bersini S**, Zare-Eelanjegh E, Jalilian E, Cha BH, Antona S, Enrico A, Gao Y, Hassan S, Acevedo JP, Dokmeci MR, Zhang YS, Khademhosseini A, Shin SR. *Bioprinted 3D vascularized tissue model for drug toxicity analysis*. Biomicrofluidics 2017, 11(4):044109. doi: 10.1063/1.4994708. eCollection 2017.
- Arrigoni C*, Gilardi M*, **Bersini S***, Candrian C, Moretti M. *Bioprinting and Organ-on-Chip Applications Towards Personalized Medicine for Bone Diseases*. Stem Cell Rev. 2017 Jun;13(3):407-417. doi: 10.1007/s12015-017-9741-5.
* **equally contributing authors**
- Arrigoni C, **Bersini S**, Gilardi M, Moretti M. *In Vitro Co-Culture Models of Breast Cancer Metastatic Progression towards Bone*. Int J Mol Sci. 2016, 17(9). pii: E1405. doi: 10.3390/ijms17091405.
- Visone R, Gilardi M, Marsano A, Rasponi M, **Bersini S***, Moretti M*. *Cardiac Meets Skeletal: What's New in Microfluidic Models for Muscle Tissue Engineering*. Molecules 2016, 21(9). pii: E1128. doi: 10.3390/molecules21091128.
* **equally contributing authors**
- **Bersini S**, Yazdi IK, Talò G, Shin SR, Moretti M, Khademhosseini A. *Cell-microenvironment interactions and architectures in microvascular systems*. Biotechnol Adv. 2016, 34(6):1113-30.
- Zhang YS, Arneri A*, **Bersini S***, Shin SR, Zhu K, Goli-Malekabadi Z, Aleman J, Colosi C, Busignani F, Dell'Erba V, Bishop C, Shupe T, Demarchi D, Moretti M, Rasponi M, Dokmeci MR, Atala A, Khademhosseini A. *Bioprinting 3D microfibrillar scaffolds for engineering endothelialized myocardium and heart-on-a-chip*. Biomaterials 2016, 110:45-59.
* **equally contributing authors**
- Arrigoni C, Bongio M, Talò G, **Bersini S**, Enomoto J, Fukuda J, Moretti M. *Rational Design of Prevascularized Large 3D Tissue Constructs Using Computational Simulations and*

Biofabrication of Geometrically Controlled Microvessels. Adv Healthc Mater. 2016, 5(13):1617-26.

- **Bersini S**, Arrigoni, Lopa S, Bongio M, Martin I, Moretti M, *Engineered miniaturized models of musculoskeletal diseases*. Drug Discovery Today 2016, doi: 10.1016/j.drudis.2016.04.015.
- Bongio M, Lopa S, Gilardi M, **Bersini S**, Gilardi M, Moretti M, *A 3D vascularized bone remodeling model combining osteoblasts and osteoclasts in a CaP nanoparticle-enriched matrix*, Nanomedicine 2016, 11(9):1073-1091
- **Bersini S**, Gilardi M, Arrigoni C, Talò G, Zamai M, Zagra L, Caiolfa V, Moretti M, *Human in vitro 3D co-culture model to engineer vascularized bone-mimicking tissues combining computational tools and statistical experimental approach*, Biomaterials 2016, 76:157-172
- **Bersini S**, Sansone V, Frigo CA, *A dynamic multibody model of the physiological knee to predict internal loads during movement in gravitational field*, Computer Methods in Biomechanics and Biomedical Engineering 2016, 19(5):571-579
- Zhang YS, Aleman J, Arneri A, **Bersini S**, Piraino F, Shin SR, Dokmeci MR, Khademhosseini A, *From cardiac tissue engineering to heart-on-a-chip: beating challenges*, Biomedical Materials 2015, 10(3):034006
- **Bersini S** and Moretti M, *3D functional and perfusable microvascular networks for organotypic microfluidic models*. J Mater Sci Mater Med 2015, 26(5):5520
- *Jeon JS, ***Bersini S**, Gilardi M, Dubini G, Charest JL, Moretti M, Kamm RD, *Human 3D vascularized organotypic microfluidic assays to study breast cancer cell extravasation*. Proc Natl Acad Sci U S A 2015, 112(1):214-9
* **equally contributing authors**
Featured on Science Editors' Choice
- **Bersini S**, Jeon JS, Moretti M, Kamm RD, *In vitro models of the metastatic cascade: from local invasion to extravasation*, Drug Discovery Today 2014, 19:735-742
- **Bersini S**, Jeon JS, Dubini G, Arrigoni C, Chung S, Charest JL, Moretti M, Kamm RD, *A microfluidic 3D in vitro model for specificity of breast cancer metastases to bone*, Biomaterials 2014, 35:2454-2461
Featured on The Economist
- *Jeon JS, ***Bersini S**, Whisler JA, Chen MB, Dubini G, Charest JL, Moretti M, Kamm RD, *Generation of 3D functional microvascular networks with human mesenchymal stem cells in microfluidic systems*, Integrative Biology 2014, 6:555-563
* **equally contributing authors**
- Galbusera F, Tornese DZ, Anasetti F, **Bersini S**, Volpi P, La Barbera L, Villa T. *Does soccer cleat design influence the rotational interaction with the playing surface?* Sports Biomech. 2013, 12(3):293-301.
- Nason F, Morganti E, Collini C, Röss C, **Bersini S**, Pennati G, Boschetti F, Colombini A, Lombardi G, Banfi G, Lorenzelli L, Dubini G, *Design of microfluidic devices for drug screening on in-vitro cells for osteoporosis therapies*, Microelectron. Eng. 2011, 88:1801-1806

Conference Proceedings (update January 2022)

- **Bersini S**, *A vascularized human muscle-on-a-chip to elucidate the contribution of vascular degeneration on the progression of muscular dystrophies*, 13th Swiss Meeting on Muscle Research, December 5-7, 2021, Macolin/Magglingen, Switzerland (**oral**)
- Colombo MV, **Bersini S**, Arrigoni C, Gilardi M, Sansoni V, Lombardi G, Moretti M. *Engineering Human Vascularized Immuno Bone Minitissues as Antimetastatic Drug Screening Platforms*, TERMIS World Congress 2021, November 15-19, 2021, Maastricht, the Netherlands (**oral**)
- **Bersini S**, Arrigoni C, Colombo MV, Candrian C, Moretti M, *Complex 3D vascularized organotypic models mimicking musculoskeletal pathological environments*, TERMIS World Congress 2021, November 15-19, 2021, Maastricht, the Netherlands (**poster**)
- Colombo MV, **Bersini S**, Arrigoni C, Gilardi M, Sansoni V, Lombardi G, Moretti M, *Human Vascularized Immuno Bone Minitissue as Antimetastatic Drug Screening Platform*, International Conference on Biofabrication, September 27-29, 2021, Australia (**poster**)
- **Bersini S**, Schulte R, Hetzer MW, *Age-dependent modulation of the human microvasculature by microenvironment and serum*, 11th International Kloster Seon Meeting “Angiogenesis”, September 24-27, 2021, Kloster Seon, Germany (**poster**)
- Possenti L, El Bezawy R, Giandini T, Stucchi C, Petta D, Cicchetti A, Doldi V, Candrian C, Costantino ML, **Bersini S**, Arrigoni C, Moretti M, Rancati T, *In-vitro microvasculature-on-a-chip to study biological alterations due to radiotherapy*, Workshop “Adaptation of the tumour and its ecosystem to radiotherapies“, September 22-25, 2021, Manoir de Kerdréan, Le Bono, France (**poster**)
- Crippa M, **Bersini S**, Gilardi M, Arrigoni C, Candrian C, Dubini G, Vanoni M, Moretti M, *A microphysiological early metastatic niche on a chip reveals how heterotypic cell interactions and inhibition of integrin subunit β_3 impact breast cancer cell extravasation*, EUROoCS Conference 2021, July 1-2, 2021, online for COVID restrictions (**oral**)
- **Bersini S**, Arrigoni C, Gilardi M, Crippa M, Colombo MV, Candrian C, Moretti M. *Complex 3D vascularized models for investigating heterotypic cell interactions within engineered pathological environments*. TERMIS AP 2019 Conference, October 14-17, 2019, Brisbane, Australia (**oral**)
- Colombo MV, **Bersini S**, Gilardi M, Arrigoni C, Sansoni V, Ragni E, Lombardi G, Moretti M. *Engineering 3D Human Vascularized Bone Model as Antimetastatic Drug Screening Platform*, TERMIS-EU Workshop “3D Bioprinting in Cancer Research”, August 26-27, 2019, Nantes, France (**oral**)
- **Bersini S**, Gilardi M, Ugolini S, Sansoni V, Talò G, Perego S, Zanotti S, Ostano P, Mora M, Soncini M, Vanoni M, Lombardi G, Moretti M. *Engineering an environment for the study of fibrosis: A 3D human muscle model with endothelium specificity and endomysium*, TERMIS EU 2019, May 27-31, 2019, Rhodes, Greece (**oral**)
- Crippa M, Gilardi M, **Bersini S**, Arrigoni C, Gamba S, Falanga A, Vanoni M, Candrian C, Moretti M. *An in vitro multi-culture approach to investigate heterotypic interactions occurring in the early metastatic niche*. TERMIS EU 2019, May 27-31, 2019, Rhodes, Greece (**oral**)

- **Bersini S**, Arrojo e Drigo R, Huang L, Shokhirev MN and Hetzer MW. *Age-Dependent Modulation of the Human Skin Microvasculature by Microenvironment and Serum*, Gordon Research Conference Vascular Biology, January 20-25, 2019, Ventura, USA (**oral and poster**)
- Crippa M, Gilardi M, **Bersini S**, Arrigoni C, Gamba S, Falanga A, Vanoni M, Candrian C, Moretti M. *An engineered vascularized human early metastatic niche for the study of breast cancer cells extravasation*. EACR conference: Goodbye Flat Biology, September 9-12, 2018, Berlin, Germany (**poster**)
- Arrigoni C, **Bersini S**, Gilardi M, Crippa M, Colombo MV, Ostano P, Chiorino G, Ghilardi C, Bani MR, Moretti M, *Investigating the Role of Organotypic Endothelial Cells through Human Vascularized 3D Models*, TERMIS World Congress 2018, September 4-7, 2018, Kyoto, Japan (**poster**)
- **Bersini S**, Gilardi M, Ugolini S, Sansoni V, Talò G, Perego S, Zanotti S, Mora M, Soncini M, Vanoni M, Lombardi G, Moretti M, *Endothelium Muscle-specificity Induction and Fibroblast Recruitment in Engineered 3D Human Muscle Environment for the Study of Fibrosis*, TERMIS World Congress 2018, September 4-7, 2018, Kyoto, Japan (**poster**)
- Yoshimura C, Kageyama T, Kataoka K, Moretti M, **Bersini S**, Velotta G, Kasai K, Fukuda J, *Spontaneous hair follicle germ (HFG) formation for regenerative medicine*, TERMIS World Congress 2018, September 4-7, 2018, Kyoto, Japan (**oral**)
- Gilardi M, **Bersini S**, Vanoni M, Kamm RD, Moretti M, *Engineered microfluidic 3D human microvascular models identify novel therapeutic targets affecting cancer cell extravasation*, TERMIS EU 2017, June 26-30, 2017, Davos, Switzerland (**oral**)
- **Bersini S**, Gilardi M, Ugolini S, Sansoni V, Talò G, Perego S, Soncini M, Vanoni M, Lombardi G, Moretti M, *Engineered 3D vascularized skeletal muscle environment inducing the muscle-specificity of the endothelium*, TERMIS EU 2017, June 26-30, 2017, Davos, Switzerland (**poster**)
- Bianchi E, Arrigoni C, Piergiovanni M, Roselli P, De Gennaro M, **Bersini S**, Gilardi M, Enomoto J, Fukuda J, Dubini G, Moretti M, *Selective cell adhesion in microchannels: hydrodynamic structures combined with aptamer binding to improve microfluidic cell selection*, TERMIS EU 2017, June 26-30, 2017, Davos, Switzerland (**poster**)
- Gilardi M, **Bersini S**, Vanoni M, Kamm RD, Moretti M, *Engineered microfluidic 3D human microvasculature identifies Talin-1-dependent adhesion and FAK activation as the key promoter of cancer cell trans-endothelial migration*, AACR Annual Meeting 2017, April 1-5, 2017, Washington DC, USA (**oral**)
- Gilardi M, **Bersini S**, Vanoni M, Kamm RD, Moretti M, *The central role of Talin-1 in cancer cell extravasation in metastases dissected through a human vascularized 3D microfluidic assay*, TERMIS-AM 2016, December 11-14, 2016, San Diego, USA (**oral**)
- **Bersini S**, Gilardi M, Kamm RD, Moretti M, *Design of Micro and Mesoscale Human Vascularized Models for the Study of Cancer Metastases*, TERMIS-AM 2016, December 11-14, 2016, San Diego, USA (**oral**)
- **Bersini S**, Gilardi M, Arrigoni C, Lopa S, Bongio M, Talò G, Vanoni M, Kamm RD, Moretti M, *3D microscale human models of vascularized organ-specific environments to study cancer cell*

extravasation, 2nd EACR Conference Goodbye Flat Biology: Models, Mechanisms and Microenvironment, October 2-5, 2016, Berlin, Germany (**poster**)

- Bianchi E, Piergiovanni M, De Gennaro M, **Bersini S**, Gilardi M, Arrigoni C, Enomoto J, Fukuda J, Gautieri A, Moretti M, Dubini G, *Hydrodynamic structures to improve cell capturing in microchannels*, 2016, 5th Micro and Nano Flows Conference, September 11-14, 2016, Milan, Italy (**oral**)
- Gilardi M, **Bersini S**, Calleja AB, Kamm RD, Vanoni M, Moretti M, *The key role of talin-1 in cancer cell extravasation through human vascularized 3D microfluidic model*, 2016, 8th International Conference on Thrombosis and Hemostasis Issues in Cancer, April 8-10, 2016, Bergamo, Italy (**poster**)
- Bianchi E, Piergiovanni M, De Gennaro M, **Bersini S**, Gilardi M, Arrigoni C, Enomoto J, Fukuda J, Gautieri A, Moretti M, Dubini G, *Computational fluid dynamic evaluation of hydrodynamic structures improving cell capturing in microchannels*, 2016, Lab-on-a-chip and Microfluidics, March 15-16, 2016, Madrid, Spain (**poster**)
- **Bersini S**, Jeon J, Gilardi M, Arrigoni C, Talò G, Caiolfa V, Kamm RD, Moretti M, *Micro and meso-scale human vascularized organ-specific models to study cancer cell extravasation*, 2015 International Conference on Biofabrication, November 7-9, 2015, Utrecht, The Netherlands (**oral**)
- Gilardi M, **Bersini S**, Boussomier A, Kamm RD, Moretti M, Vanoni M, *Dissection of cancer cell extravasation through human vascularized 3D microfluidic model: the major role of talin-1*, 2015 AACR Tumor Metastasis Conference, November 30-December 3, 2015, Austin, USA (**oral**)
- **Bersini S**, Jeon JS, Kamm RD, Moretti M, *Human 3D Vascularized Organotypic Microfluidic Models for the study of Breast Cancer Cell Extravasation*, 2015 4th TERMIS World Congress, September 8-11, 2015, Boston, USA (**poster**)
- Bongio M, Arrigoni C, Talò G, **Bersini S**, Enomoto J, Fukuda J, Moretti M, *Geometrically controlled micro-vascularized constructs based on electrochemical transfer of endothelial monolayer*, 2015 4th TERMIS World Congress, September 8-11, 2015, Boston, USA (**poster**)
- Zhang YS, Arneri A, Dell'Erba V, Shin SR, Aleman J, Busignani F, **Bersini S**, Dokmeci M, Annabi N, Mangoni ME, Rasponi M, Khademhosseini A, *Bioprinting the heart: applications in tissue fabrication and organs-on-a-chip*, 2015 4th TERMIS World Congress, September 8-11, 2015, Boston, USA (**poster**)
- Jeon JS, **Bersini S**, Moretti M and Kamm RD, *Vascularized organotypic microfluidic assays to study breast cancer cell extravasation*, Biomedical Engineering Society (BMES) Annual Meeting, October 7-10, 2015, Tampa, USA (**poster**)
- Jeon JS, **Bersini S**, Dubini G, Charest J, Moretti M, Kamm RD, *Extravasation of breast cancer cells to a bone-cell conditioned microenvironment in functional 3D microvascular networks generated by vasculogenesis in a microfluidic system*, Cancer Research 2015;75 (1 Supplement): Abstract nr B23 (**poster**)
- Gilardi M, Arrigoni C, **Bersini S**, Jeon J, De Luca P, Brogginini M, Kamm RD and Moretti M, *Investigation of bone metastases through human organ specific in vitro models*, Gordon Research

Seminar “Stem Cells and Cancer”, February 14-15, 2015, Ventura, USA (**oral**). A **poster** was presented at the Gordon Research Conference “Stem Cells and Cancer”, February 15-20, 2015, Ventura, USA)

- **Bersini S**, Arrigoni C, Jeon JS, Kamm RD, Moretti M, *Micro-vascularized organ-specific 3D models for cancer metastases*, 6th European Conference of the International Federation for Medical and Biological Engineering, September 7-11, 2014, Dubrovnik, Croatia (**oral**)
- **Bersini S**, Jeon JS, Kamm RD, Moretti M, *Generation of 3D functional microvascular networks with mural cell-like human mesenchymal stem cells in microfluidic systems*, 26th European Conference of Biomaterials, August 31-September 3, 2014, Liverpool, UK (**oral**)
- **Bersini S**, Jeon JS, Dubini G, Arrigoni C, Moretti M, Kamm RD, *An organ-specific microfluidic model for breast cancer cell extravasation and metastases to bone*, 7th World Congress of Biomechanics, July 6-11, 2014, Boston, USA (**oral**)
- **Bersini S**, Jeon JS, Dubini G, Arrigoni C, Moretti M, Kamm RD, *A microfluidic model for breast cancer metastases to bone*, Termis EU 2014, June 10-13, 2014, Genova, Italy (**oral**)
- **Bersini S**, Jeon JS, Arrigoni C, Dubini G, Moretti M, Kamm RD, *A microfluidic model for cancer metastases to bone*, 19th Congress of the European Society of Biomechanics, 25-28 August 2013, Patras, Greece (**oral**)
- Jeon JS, **Bersini S**, Arrigoni C, Chung S, Charest J, Moretti M, Kamm RD, *In vitro model for tumor cell extravasation to bone*, 2013 Biomedical Engineering Society Annual Meeting, 25-28 September 2013, Seattle, USA (**poster**)
- Piraino F, Pierro M, **Bersini S**, Redaelli A, Rasponi M, Moretti M, *Experimental and computational model of a microfluidic platform for micromass generation and culture*, 3rd TERMIS World Congress 2012, 5-8 September 2012, Vienna, Austria (**poster**)
- Piraino F, **Bersini S**, Pierro M, Laganà M, Redaelli A, Rasponi M, Moretti M, *Microfluidic device for cell micromass generation: computational and experimental study*, 18th Congress of the European Society of Biomechanics, 1-4 July 2012, Lisbon, Portugal (**oral**)
- **Bersini S**, Sansone V, Anasetti F, Galbusera G, Frigo CA, *Biomechanical analysis of the muscular and ligament behavior of the knee joint through a subject-specific computational model*, 10th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering 2012, 11-14 April 2012, Berlin, Germany (**oral**)
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- Piraino F, Pierro M, **Bersini S**, Laganà M, Redaelli A, Rasponi M, Moretti M, *Cell micromass generation within a microchamber by modulation of non-geometrical parameters*, International Conference on Biofabrication in Toyama 2011, 6-8 October 2011, Toyama, Japan (**oral**)