

17 September 2018, Monday

07:00 – 08:00 **MICCAI Running**

08:30 – 09:30 **Registration**

09:30 – 10:00 **Opening Session**
[Federico Garcia Lorca – Main Auditorium](#)

10:00 – 11:00 **Oral Session I - Reconstruction and Image Quality**
[Federico Garcia Lorca – Main Auditorium](#)
Chairs:

- 10:00-10:15 **Adversarial Sparse-View CBCT Artifact Reduction**
*Haofu Liao**; Zhimin Huo; William Sehnert; S. Kevin Zhou; Jiebo Luo
- 10:15-10:30 **Multi-channel Generative Adversarial Network for Parallel Magnetic Resonance Image Reconstruction in K-space**
*Pengyue Zhang**; Fushen Wang; Wei Xu; Yulee Li
- 10:30-10:45 **3D Fetal Skull Reconstruction from 2DUS via Deep Conditional Generative Networks**
*Juan J. Cerrolaza**; Yuanwei Li; Carlo Biffi; Alberto Gomez; Matthew Sinclair; Jacqueline Matthew; Caroline Knight; Bernhard Kainz; Daniel Rueckert
- 10:45-10:50 **Phase-Sensitive Region-of-Interest Computed Tomography**
*Lina Felsner**; Martin Berger; Sebastian Kaeppler; Johannes Bopp; Veronika Ludwig; Thomas Weber; Georg Pelzer; Thilo Michel; Andreas K Maier; Gisela Anton; Christian Riess
- 10:50-10:55 **Cardiac MR Segmentation from Undersampled k-space using Deep Latent Representation Learning**
*Jo Schlemper**; Ozan Oktay; Wenjia Bai; Daniel Coelho de Castro; Jinming Duan; Chen Qin; Joseph Hajnal; Daniel Rueckert
- 10:55-11:00 **Automatic, Fast and Robust Characterization of Noise Distributions for Diffusion MRI**
Samuel St-Jean*; Alberto De Luca; Max Viergever; Alexander Leemans

11:00 – 11:30 **Coffee Break**

11:30 – 12:30 **Poster Session I**
Reconstruction and Image Quality
Machine Learning and Statistical Analysis

12:30 – 13:30 **Keynote 1: [Geraldine McGinty](#)**

13:30 – 15:00 **Lunch / Women at MICCAI Lunch**

15:00 – 16:15 **Oral Session II - Machine learning and statistical analysis**

Federico Garcia Lorca – Main Auditorium

Chairs:

15:00-15:15 **Concurrent Spatial and Channel 'Squeeze & Excitation' in Fully Convolutional Networks**

*Abhijit Guha Roy**; Nassir Navab; Christian Wachinger

15:15-15:30 **Roto-Translation Covariant Convolutional Networks for Medical Image Analysis**

*Erik J Bekkers**; Maxime Lafarge; Mitko Veta; Koen Eppenhof; Josien Pluim; Remco Duits

15:30-15:45 **Distribution Matching Losses Can Hallucinate Features in Medical Image Translation**

*Joseph Paul Cohen**; Margaux Luck; Sina Honari

15:45-16:00 **Training Medical Image Analysis Systems like Radiologists**

*Gabriel Maicas**; Andrew Bradley; Jacinto Nascimento; Ian Reid; Gustavo Carneiro

16:00-16:15 **Exploring Uncertainty Measures in Deep Networks for Multiple Sclerosis Lesion Detection and Segmentation**

*Tanya Nair; Doina Precup; Douglas Arnold; Tal Arbel**

16:15 – 16:45 **Coffee Break**

16:45 – 18:00 **Oral Session III - Registration and Image Guidance**

Federico Garcia Lorca – Main Auditorium

Chairs:

16:45-17:00 **Unsupervised Learning for Fast Probabilistic Diffeomorphic Registration**

*Adrian V Dalca**; Guha Balakrishnan; John Guttag; Mert Sabuncu

17:00-17:15 **Adversarial Similarity Network for Evaluating Image Alignment in Deep Learning based Registration**

*Jingfan Fan**; Xiaohuan Cao; Zhong Xue; Pew-Thian Yap; Dinggang Shen

17:15-17:30 **Elastic Registration of Geodesic Vascular Graphs**

*Stefano Moriconi**; Maria A. Zuluaga; Rolf Jäger; Parashkev Nachev; Sebastien Ourselin; M. Jorge Cardoso

17:30-17:45 **Hierarchical Spherical Deformation for Shape Correspondence**

*Ilwoo Lyu**; Martin Styner; Bennett A Landman

17:45-17:50 **Improving Surgical Training Phantoms by Hyperrealism: Deep Unpaired Image-to-Image Translation from Real Surgeries**

*Sandy Engelhardt**; Raffale De Simone; Peter M. Full; Matthias Karck; Ivo Wolf

- 17:50-17:55 **Uncertainty in Multitask Learning: Joint Representations for Probabilistic MR-only Radiotherapy Planning**
*Felix JS Bragman**; Ryutaro Tanno; Zach Eaton-Rosen; Wenqi Li; David Hawkes; Sebastien Ourselin; Daniel Alexander; Jamie R McClelland; M. Jorge Cardoso
- 17:55-18:00 **A Combined Simulation & Machine Learning Approach for Image-based Force Classification during Robotized Intravitreal Injection**
*Andrea Mendizabal**; Jan Hermann; Tatiana Fountoukidou; Raphael Sznitman; Stephane Cotin
- 18:00 – 19:30 **Poster Session II**
Registration and Image Guidance
Optical and Histology Applications
- 19:30 **Departure to Gala Dinner**
- 20:00 - 23:30 **MICCAI 2018 Gala Dinner**

18 September 2018, Tuesday

07:00 – 08:00 **MICCAI Running**

08:30 – 09:30 **Registration**

09:30 – 11:00 **Parallel Oral Sessions IV-A & IV-B**

Oral Session IV-A - Optical and Histology Applications

Federico Garcia Lorca – Main Auditorium

Chairs:

- 09:30-09:45 **Instance Segmentation and Tracking with Cosine Embeddings and Recurrent Hourglass Networks**
*Christian Payer**; Darko Stern; Thomas Neff; Horst Bischof; Martin Urschler
- 09:45-10:00 **A Pixel-wise Distance Regression Approach for Joint Retinal Optical Disc and Fovea Detection**
*Maria Ines Ferraz Meyer**; Adrian Galdran; Ana Maria Mendonça; Aurélio Campilho
- 10:00-10:15 **Predicting Cancer with a Recurrent Visual Attention Model for Histopathology Images**
*Aicha BenTaieb**; Ghassan Hamarneh
- 10:15-10:30 **Model-based Refinement of Nonlinear Registrations in 3D Histology Reconstruction**
*Juan Eugenio Iglesias**; Marco Lorenzi; Sebastiano Ferraris; Loic Peter; Marc Modat; Allison Stevens; Bruce Fischl; Tom Vercauteren
- 10:30-10:45 **Adversarial Domain Adaptation for Classification of Prostate Histopathology Whole-Slide Images**
*Jian Ren**; Ilker Hacihaliloglu; Eric Singer; David Foran; Xin Qi
- 10:45-11:00 **A Cascaded Refinement GAN for Phase Contrast Microscopy Image Super Resolution**
*Liang Han; Zhaozheng Yin**

Oral Session IV-B - fMRI and Diffusion Imaging

Manuel De Falla Auditorium – Level 1

Chairs:

- 09:30-09:45 **Tract Orientation Mapping for Bundle-Specific Tractography**
*Jakob Wasserthal; Peter F Neher; Klaus H. Maier-Hein**
- 09:45-10:00 **A Global Estimation Framework for Asymmetric Fiber Orientation Distributions**
*Ye Wu**; Yuanjing Feng; Dinggang Shen; Pew-Thian Yap
- 10:00-10:15 **Harmonizing Diffusion MRI Data across Magnetic Field Strengths**
*Suheyra Cetin Karayumak**; Marek Kubicki; Yogesh Rathi

- 10:15-10:30 **A Region-of-Interest-Reweight 3D Convolutional Neural Network for the Analytics of Brain Information Processing**
*Xiuyan Ni**; Zhennan Yan; Tingting Wu; Jin Fan; Chao Chen
- 10:30-10:45 **Quantitative Deconvolution of fMRI data with Multiecho Sparse Paradigm Free Mapping**
*Cesar Caballero-Gaudes**; Stefano Moia; Peter A. Bandettini; Javier Gonzalez-Castillo
- 10:45-11:00 **Brain Decoding from Functional MRI using Long Short-Term Memory Recurrent Neural Networks**
*Hongming Li**; Yong Fan
- 11:00 – 11:30 **Coffee Break**
- 11:30 – 12:30 **Poster Session III**
Cardiac, Chest and Abdominal Applications
- 12:30 – 13:30 **Keynote 2: [Paolo Dario](#)**
- 13:30 – 15:00 **Lunch / Media Editorial Board Lunch**
- 15:00 – 15:30 **MICCAI Society Update**
- 15:30 – 16:30 **Keynote 3: [Kristen Grauman](#)**
- 16:30 – 17:00 **Coffee Break**
- 17:00 – 18:15 **Parallel Oral Sessions V-A & V-B**
- Oral Session V-A - Cardiac, Chest and Abdominal applications**
[Federico Garcia Lorca](#) – Main Auditorium
Chairs:
- 17:00-17:15 **Quantifying Tensor Field Similarity With Global Distributions and Optimal Transport**
*Arnold Gomez**; Maureen Stone; Philip Bayly; Jerry Prince
- 17:15-17:30 **Factorised Spatial Representation Learning: Application in Semi-supervised Myocardial Segmentation**
*Agisilaos Chartsias**; Thomas Joyce; Giorgos Papanastasiou; Scott Semple; Michelle Williams; David Newby; Rohan Dharmakumar; Sotirios Tsafaris
- 17:30-17:45 **High-dimensional Bayesian Optimization of Personalized Cardiac Model Parameters via an Embedded Generative Model**
*Jwala Dhamala**; Sandesh Ghimire; John L. Sapp; Bohumil Milan Horacek; Linwei Wang

- 17:45-18:00 **TextRay: Mining Clinical Reports to Gain a Broad Understanding of Chest X-rays**
*Jonathan Laserson**; Christine Dan Lantsman; Michal Cohen-Sdady; Itamar Tamir; Eli Goz; Chen Brestel; Shir Bar; Maya Atar; Eldad Elnekave
- 18:00-18:15 **Task Driven Generative Modeling for Unsupervised Domain Adaptation: Application to X-ray Image Segmentation**
*Yue Zhang**; Shun Miao; Tommaso Mansi; Rui Liao

Oral Session V-B - Neuroimaging

Manuel De Falla Auditorium – Level 1

Chairs:

- 17:00-17:15 **Exploratory Population Analysis with Unbalanced Optimal Transport**
*Samuel Gerber**; Marc Niethammer; Martin Styner; Stephen R Aylward
- 17:15-17:30 **Learning Myelin Content in Multiple Sclerosis from Multimodal MRI through Adversarial Training**
*Wen Wei**; Emilie Poirion; Benedetta Bordini; Stanley Durrleman; Nicholas Ayache; Bruno Stankoff; Olivier Colliot
- 17:30-17:45 **Generative Discriminative Models for Multivariate Inference and Statistical Mapping in Medical Imaging**
*Erdem Varol**; Aristeidis Sotiras; Ke Zeng; Christos Davatzikos
- 17:45-18:00 **Using the Anisotropic Laplace Equation to Compute Cortical Thickness**
*Anand Joshi**; Chitresh Bhushan; Ronald Salloum; Jessica Wisnowski; David Shattuck; Richard Leahy
- 18:00-18:15 **Multi-Label Transduction for Identifying Disease Comorbidity Patterns**
*Ehsan Adeli**; Dongjin Kwon; Kilian Pohl
- 18:15 – 19:45 **Poster Session IV**
fMRI and Diffusion Imaging
Neuroimaging
- 19:45 – 20:45 **Networking at Posters**

19 September 2018, Wednesday

07:00 – 08:00 MICCAI Running

08:30 – 09:30 Registration

09:30 – 11:00 **Oral Session VI - Computer Assisted Intervention**

Federico Garcia Lorca – Main Auditorium

Chairs:

- 09:30-09:45 **X-ray-transform Invariant Anatomical Landmark Detection for Pelvic Trauma Surgery**
*Bastian Bier**; *Mathias Unberath*; *Jan-Nico Zaech*; *Javad Fotouhi*; *Mehran Armand*; *Greg Osgood*; *Nassir Navab*; *Andreas K Maier*
- 09:45-10:00 **Endoscopic Navigation in the Absence of CT Imaging**
*Ayushi Sinha**; *Xingtong Liu*; *Austin Reiter*; *Masaru Ishii*; *Gregory D. Hager*; *Russell H. Taylor*
- 10:00-10:15 **Spatiotemporal Manifold Prediction Model for Anterior Vertebral Body Growth Modulation Surgery in Idiopathic Scoliosis**
William Mandel; *Olivier Turcot*; *Dejan Knez*; *Stefan Parent*; *Samuel Kadoury**
- 10:15-10:30 **Evaluating Surgical Skills from Kinematic Data using Convolutional Neural Networks**
*Hassan Ismail Fawaz**; *Germain Forestier*; *Jonathan Weber*; *Lhassane Idoumghar*; *Pierre-Alain Muller*
- 10:30-10:45 **Volumetric Clipping Surface: Un-occluded Visualization of Structures Preserving Depth Cues into Surrounding Organs**
Bhavya Ajani; *Aditya Bharadwaj*; *Karthik Krishnan**
- 10:45-10:50 **Needle Tip Force Estimation using an OCT Fiber and a Fused convGRU-CNN Architecture**
*Nils Gessert**; *Torben Priegnitz*; *Thore Saathoff*; *Sven-Thomas Antoni*; *David Meyer*; *Moritz Franz Hamann*; *Klaus-Peter Jünemann*; *Christoph Otte*; *Alexander Schlaefer*
- 10:50-10:55 **Closing the Calibration Loop: An Inside-out-tracking Paradigm for Augmented Reality in Orthopedic Surgery**
Jonas Hajek; *Mathias Unberath**; *Javad Fotouhi*; *Bastian Bier*; *Sing Chun Lee*; *Greg Osgood*; *Andreas K Maier*; *Mehran Armand*; *Nassir Navab*
- 10:55-11:00 **Higher Order of Motion Magnification for Vessel Localisation in Surgical Video**
*Mirek Janatka**; *Ashwin Sridhar*; *John Kelly*; *Danail Stoyanov*

11:00 – 11:30 **Coffee Break**

11:30 – 12:30 **Poster Session V**
Computer Assisted Intervention
Segmentation

12:30 – 13:30 **Keynote 4: [Bradley Nelson](#)**

13:30 – 15:00 **Lunch / IJCARS Editorial Board Lunch**

15:00 – 17:00 **Oral Session VII - Segmentation**
Federico Garcia Lorca – Main Auditorium
Chairs:

- 15:00-15:15 **MS-Net: Mixed-Supervision Fully-Convolutional Networks for Full-Resolution Segmentation**
*Meet Shah; Shabbir Merchant; Suyash P. Awate**
- 15:15-15:30 **Autofocus Layer for Semantic Segmentation**
*Yao Qin; Konstantinos Kamnitsas; Siddharth Ancha; Jay Nanavati; Garrison Cottrell; Antonio Criminisi; Aditya Nori**
- 15:30-15:45 **3D Segmentation with Exponential Logarithmic Loss for Highly Unbalanced Object Sizes**
Ken C. L. Wong; Mehdi Moradi; Hui Tang; Tanveer Syeda-Mahmood*
- 15:45-15:50 **Revealing Regional Associations of Cortical Folding Alterations with In Utero Ventricular Dilation Using Joint Spectral Embedding**
Oualid Benkarim; Gerard Sanroma; Gemma Piella; Islem Rekik; Nadine Hahner; Elisenda Eixarch; Miguel Angel González Ballester; Dinggang Shen; Gang Li*
- 15:50-15:55 **CompNet: Complementary Segmentation Network for Brain MRI Extraction**
Raunak Dey; Yi Hong*
- 15:55-16:00 **The Deep Poincaré Map: A Novel Approach for Left Ventricle Segmentation**
Yuanhan Mo; Fangde Liu; Mcilwraith Douglas; Guang Yang; Jingqing Zhang; Taigang He; Yike Guo*
- 16:00-16:15 **How to Exploit Weaknesses in Biomedical Challenge Design and Organization**
Annika Reinke; Matthias Eisenmann; Sinan Onogur; Marko Stankovic; Patazrick Scholz; Peter Full; Hrvoje Bogunovic; Bennett A Landman; Oskar Maier; Bjoern Menze; Gregory Sharp; Korsuk Sirinukunwattana; Stefanie Speidel; Fons van der Sommen; Guoyan Zheng; Henning Müller; Michal Kozubek; Tal Arbel; Andrew Bradley; Pierre Jannin; Anette Kopp-Schneider*
- 16:15-16:30 **Semi-Supervised Learning for Segmentation under Semantic Constraint**
Pierre-Antoine Ganaye; Michael Sdika; Hugues Benoit-Cattin*

- 16:30-16:45 **Training Multi-organ Segmentation Networks with Sample Selection by Relaxed Upper Confident Bound**
*Yan Wang**; Yuyin Zhou; Peng Tang; Wei Shen; Elliot K Fishman; Alan Yuille
- 16:45-16:50 **Bayesian VoxDRN: A Probabilistic Deep Voxelwise Dilated Residual Network for Whole Heart Segmentation from 3D MR Images**
*Zenglin Shi; Guodong Zeng; Le Zhang; Xiahai Zhuang; Lei Li; Guang Yang; Guoyan Zheng**
- 16:50-16:55 **Accurate Detection of Inner Ears in Head CTs Using a Deep Volume-to-Volume Regression Network with False Positive Suppression and a Shape-Based Constraint**
*Dongqing Zhang**; Jianing Wang; Jack Noble; Benoit Dawant
- 16:55-17:00 **Accurate and Robust Segmentation of the Clinical Target Volume for Prostate Brachytherapy**
*Davood Karimi**; Qi Zeng; Prateek Mathur; Apeksha Avinash; Ingrid Spadinger; Sara Mahdavi; Purang Abolmaesumi; Septimiu Salcudean

17:00 – 17:30 Coffee Break

17:30 – 18:30 MICCAI Awards and Closing Ceremony

19:00 – 20:30 MICCAI Football + Alhambra Visit (For pre-purchased tickets ONLY)