

2016 Biomedical Engineering Publications, Conferences and Book Chapters

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CHANG, Thomas M.S.

- Bian Y.Z., Guo C., **Chang T.M.S** (2016): Temperature stability of Poly-[hemoglobin-superoxide dismutase-catalase- carbonic anhydrase] in the form of a solution or in the lyophilized form during storage at -80 °C, 4 °C, 25 °C and 37 °C or pasteurization at 70 °C. *Artificial Cells, Nanomedicine, and Biotechnology* 43(3):157-162.
doi: [10.3109/21691401.2015.1110871](https://doi.org/10.3109/21691401.2015.1110871)
- Wang Y, **Chang T.M.S** (2016): Biodegradable Nanocapsules Containing A Nanobiotechnological Complex for the In-vitro Suppression of A Melanoma Cell Line B16F10. *Journal of Nanosciences: Current Research* 1:1-6.
doi: [10.4172/JNCR.1000102](https://doi.org/10.4172/JNCR.1000102)

COLLINS, D. Louis

- Akbar N., Till C., Sled J. G., Binns M. A., Doesburg S. M., Aubert-Broche B., and **Collins D. L.** (2016): Altered resting-state functional connectivity in cognitively preserved pediatric-onset MS patients and relationship to structural damage and cognitive performance. *Mult Scler*, 22: 792-800. doi: [10.1177/1352458515602336](https://doi.org/10.1177/1352458515602336)
- Boucetta S., Salimi A., Dadar M., Jones B. E., **Collins D. L.**, and Dang-Vu T. T. (2016): Structural Brain Alterations Associated with Rapid Eye Movement Sleep Behavior Disorder in Parkinson's Disease. *Sci Rep* 6-26782. doi: [10.1038/srep26782](https://doi.org/10.1038/srep26782)
- Drouin S., Kochanowska A., Kersten-Oertel M., Gerard I. J., Zelmann R., De Nigris D., and **Collins D. L.** (2016): IBIS: an OR ready open-source platform for image- guided neurosurgery. *Int J Comput Assist Radiol Surg* 1-16. doi: [10.1007/s11548-016-1478-0](https://doi.org/10.1007/s11548-016-1478-0)
- Gerard I. J., Kersten-Oertel M., Petrecca K., Sirhan D., Hall J. A., and **Collins D. L.** (2016): Brain shift in neuronavigation of brain tumors: A review. *Med Image Anal* 35: 403-420.
doi: [10.1016/j.media.2016.08.007](https://doi.org/10.1016/j.media.2016.08.007)
- Giraud R., Ta V. T., Papadakis N., Manjon J. V., **Collins D. L.**, Coupe P., et al. (2016): An Optimized PatchMatch for multi-scale and multi-feature label fusion. *Neuroimage* 124:770-82. doi: [10.1016/j.neuroimage.2015.07.076](https://doi.org/10.1016/j.neuroimage.2015.07.076)
- Kim S.H., Lyu I., Fonov V.S., Vachet C., Hazlett H.C., Smith R.G., Piven J., Dager S.R., Mckinstry R.C., Pruett J.R. Jr., Evans A.C., **Collins D.L.**, Botteron K.N., Schultz R.T., Gerig G., Styner M.A., IBIS Network (2016): Development of cortical shape in the human brain from 6 to 24 months of age via a novel measure of shape complexity. *Neuroimage* 135:163-76.
doi: [10.1016/j.neuroimage.2016.04.053](https://doi.org/10.1016/j.neuroimage.2016.04.053)
- Nitzsche B., Frey S., **Collins D.L.**, Seeger J., Lobsien D., Dreyer A., Kirsten H., Stoffel M.H., Boltze J., Fonov V.S. (2016): Cerebral morphology and volumetry of ovine orientalis aries: the stereotaxic, population-averaged ovine t1w brain atlas. *Anatomia, Histologia, Embryologia* 45:53-4. doi: [10.3389/fnana.2015.00069](https://doi.org/10.3389/fnana.2015.00069)
- Nguyen T. V., Gower P., Albaugh M. D., Botteron K. N., Hudziak J. J., Fonov V. S., Collins D. L. et al. (2016): The developmental relationship between DHEA and visual attention is mediated by structural plasticity of cortico-amygdalar networks. *Psychoneuroendocrinology*, 70:122-33.
doi: [10.1016/j.psyneuen.2016.05.003](https://doi.org/10.1016/j.psyneuen.2016.05.003)
- Nguyen T.V., Lew J., Albaugh M.D., Botteron K.N., Hudziak J.J., Fonov V.S., **Collins D.L.**, Ducharme S., McCracken J.T. (2016): Sex-specific associations of testosterone with prefrontal-hippocampal development and executive function. *Psychoneuroendocrinology* 76:206-217.
doi: [10.1016/j.psyneuen.2016.12.005](https://doi.org/10.1016/j.psyneuen.2016.12.005)
- Vincent R. D., Neelin P., Khalili-Mahani N., Janke A. L., Fonov V. S., Robbins S. M., **Collins D. L.** et al. (2016): MINC 2.0: A Flexible Format for Multi-Modal Images. *Front Neuroinform* 10:35.
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- Till C., Noguera A., Verhey L.H., O'Mahony J., Yeh E.A., Mah J.K., Sinopoli K.J., Brooks B.L., Aubert-Broche B., **Collins D.L.**, Narayanan S., Arnold D.L., Banwell B.L. (2016): Cognitive and Behavioral Functioning in Childhood Acquired/Demyelinating Syndromes. *J Int Neuropsychol Soc.* 22(10):1050-1060. doi: [10.1017/S1355617716000308](https://doi.org/10.1017/S1355617716000308)

- Vincent R.D., Neelin P., Khalili-Mahani N., Janke A.L., Fonov V.S., Robbins S.M., Baghdadi L., Lerch J., Sled J.G., Adalat R., MacDonald D., Zijdenbos A.P., **Collins D.L.**, Evans A.C. (2016): MINC 2.0: A Flexible Format for Multi-Modal Images. *Front Neuroinform* 10:35. doi: [10.3389/fninf.2016.00035](https://doi.org/10.3389/fninf.2016.00035)
- Weier K., Fonov V., Aubert-Broche B., Arnold D. L., Banwell B., and **Collins D. L.** (2016): Impaired growth of the cerebellum in pediatric-onset acquired CNS demyelinating disease. *Mult Scler* 22:1266-78. doi: [10.1177/1352458515615224](https://doi.org/10.1177/1352458515615224)
- Weier K., Till C., Fonov V., Yeh E. A., Arnold D. L., Banwell B., and **Collins D. L.** (2016): Contribution of the cerebellum to cognitive performance in children and adolescents with multiple sclerosis. *Mult Scler* 22:599-607. doi: [10.1177/1352458515595132](https://doi.org/10.1177/1352458515595132)
- Xiao Y., Yan C. X., Drouin S., De Nigris D., Kochanowska A., and **Collins D. L.** (2016): User-friendly freehand ultrasound calibration using Lego bricks and automatic registration. *Int J Comput Assist Radiol Surg* 11:1703-11. doi: [10.1007/s11548-016-1368-5](https://doi.org/10.1007/s11548-016-1368-5)

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- Kersten-Oertel M., Gerard I. J., Drouin S., Petrecca K., Hall J. A., **Collins D. L.**: Towards Augmented Reality Guided Craniotomy Planning in Tumour Resections. *MIAR 2016*, Bern, Switzerland, Aug 24-26, 2016: 163-174. doi: [10.1007/978-3-319-43775-0_15](https://doi.org/10.1007/978-3-319-43775-0_15)
- Gerard I. J., Kersten-Oertel M., Kochanowska A., & **Collins D. L.**: The Validation Grid: A new tool to validate multimodal image registration. *CARS 2016*, Heidelberg, Germany, Jun 21-25, 2016.
- Xiao Y., Gerard I. J., Fonov V., De Nigris D., Therrien C., Aubert-Broche B., Drouin S., Kochanowska A., Tampieri D., & **Collins D. L.**: Atlas-guided transcranial Doppler ultrasound examination with a neurosurgical navigation system: case study. *4th Workshop on Clinical Image-based Procedures: Translational Research in Medical Imaging*, LNCS 9401:1-9. doi: [10.1007/978-3-319-31808-0_3](https://doi.org/10.1007/978-3-319-31808-0_3)
- Gerard I. J., Kersten-Oertel M., Drouin S., Hall J. A., Petrecca K., De Nigris D., Arbel T., & **Collins D. L.**: Improving Patient Specific Neurosurgical Models with Intraoperative Ultrasound and Augmented Reality Visualizations in a Neuronavigation Environment. *4th Workshop on Clinical Image-based Procedures: Translational Research in Medical Imaging*, LNCS 9401:1-8. doi: [10.1007/978-3-319-31808-0_4](https://doi.org/10.1007/978-3-319-31808-0_4)
- Tahaei M. S., Reader A. J., **Collins D. L.**: PET Image Restoration for Neurological Applications. *Nuclear Science Symposium and Medical Imaging Conference (NSS/MIC), 2016 IEEE*, Strasbourg, France, Oct 29 - Nov 5, 2016
- Tahaei M. S., Reader A. J., **Collins D. L.**: MR-Guided PET Image Denoising", *Nuclear Science Symposium and Medical Imaging Conference (NSS/MIC), 2016 IEEE*, Strasbourg, France, Oct 29 - Nov 5, 2016
- Sanford R., Fernandez Cruz A.L., Fellows L.K., Ances B.M., **Collins D.L.**, Regionally Specific Cortical Thinning in HIV+ Patients in the cART Era, *2016 Conference on Retroviruses and Opportunistic Infections (CROI)*, Boston, Massachusetts, USA, February 2016
- Fonov V.S., Dadar M., Yiming X., **Collins D.L.**: MRI patch-based imaging biomarker for automatic detection of Parkinson's disease. *Alzheimer's & Dementia: The Journal of the Alzheimer's Association*. 12(7):1088-9. doi: [10.1016/j.jalz.2016.06.2272](https://doi.org/10.1016/j.jalz.2016.06.2272)
- Binette A.P., Vogel J.W., Fonov V.S., Tremblay-Mercier J., Madjar C., Breitner J.C., **Collins D.L.**, Poirier J., Villeneuve S., PREVENT-AD Research Group: High CSF tau is related to reduced hippocampal volume and subjective cognitive decline in healthy elderly with amyloid pathology. *Alzheimer's & Dementia: The Journal of the Alzheimer's Association*. 7(12):102-3. doi: [10.1016/j.jalz.2016.06.168](https://doi.org/10.1016/j.jalz.2016.06.168)

Potvin O., Zandifar A., Fonov V.S., **Collins D.L.**, Duchesne S.,: Baseline discrepancies in MRI patch-based appearance predictive of future decline in cognitively healthy ADNI participants. *Alzheimer's & Dementia: The Journal of the Alzheimer's Association*. 2(7):112.
doi: [10.1016/j.jalz.2016.06.182](https://doi.org/10.1016/j.jalz.2016.06.182)

Potvin O., Zandifar A., Fonov V.S., **Collins L.**, Duchesne S.,: Relative risk ratio for MRI patch-based appearance metric for future decline in cognitively healthy ADNI participants. *Alzheimer's & Dementia: The Journal of the Alzheimer's Association*. 12(7):525-6.
doi: [10.1016/j.jalz.2016.06.1030](https://doi.org/10.1016/j.jalz.2016.06.1030)

Hanganu A., Houde J.C., Fonov V.S., Degroot C., Mejia-Constain B., Lafontaine A.L., Soland V., Chouinard S., **Collins D.L.**, Descoteaux M., Monchi O.,: Mild cognitive impairment is linked with white matter degeneration in the cortico-subcortical tracts in patients with Parkinson's disease. *Movement Disorders*. 1(31):473-4

De Leener B., Taso M., Fonov V., Le Troter A., Stikov N., **Collins D.L.**, Callot V., Cohen-Adad J.,: Fully-integrated T1, T2, T2*, white and gray matter atlases of the spinal cord. *In Proceedings of the 24th Annual Meeting of International Society for Magnetic Resonance in Medicine*. 7-13

Collins D.L.: Active Living for Healthy Brains, *Hippocampal segmentation*, Alberta, Canada, April 19- 20, 2016 (Invited talk)

Collins D.L.: Imaging Network Ontario, 15TH ANNUAL IMAGING NETWORK ONTARIO SYMPOSIUM, *Brain structures, anatomical variability and an application in multiple sclerosis*, Ontario, Canada, March 15-16, 2017 (invited talk).

Patents

Currently under revision.

US Provisional Patent application: *Simultaneous segmentation and grading of structures for state determination*, **D. L. Collins** & Pierrick Coupé, Filed: September 16, 2011. (US 61/535,720 / P1310USPR)

Canadian Patent application: *Simultaneous segmentation and grading of structures for state determination*, **D. L. Collins** & Pierrick Coupé, Filed: September 16, 2011.

FUNNELL, W. Robert J.

Soleimani M. & **Funnell W.R.J.** (2016): Deformation and stability of short cylindrical membranes. *Int J Mech Sci* 119: 266-272. doi: [10.1016/j.ijmecsci.2016.10.017](https://doi.org/10.1016/j.ijmecsci.2016.10.017)

Pitaro J., Al Masaoudi L., Motallebzadeh H., **Funnell W.R.J.** & Daniel S.J. (2016): Wideband reflectance measurements in newborns: Relationship to otoscopic findings. *Int J Ped Otorhinolaryngol* 86: 156-160. doi: [10.1016/j.ijporl.2016.04.036](https://doi.org/10.1016/j.ijporl.2016.04.036)

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Alrasheed A., Tewfik M., Nguyen L.H.P., **Funnell W.R.J.** & Mongeau L.: The development and validation of a 3D printed ostiomeatal complex and frontal sinus training model for endoscopic sinus surgery. *Am. Rhinologic Soc. 62nd Ann. Mtg.*, San Diego, USA, September 16-17, 2016

Noël G., Zagury-Orly I. & **Funnell W.R.J.**: Feasibility of 3-D printing an inguinal-canal model for learning anatomy. *5th Ann. SALTISE Conf.*, Montréal, Canada, Jun 3, 2016

Pitaro J, Al Masaoudi L, Motallebzadeh H, **Funnell W.R.J.** & Daniel S.J.: Wideband reflectance measurements in newborns: Relationship to otoscopic findings. *Ann. Mtg. Israeli Soc. Otolaryngol. Head Neck Surg.*, Elat, Israel. Mar 9-12, 2016

Kose O., Shapiro R., **Funnell W.R.J.** & Daniel S.J.: An experimental study of vibrations in the gerbil middle ear under static pressure. *39th Midwinter Res. Mtg., Assoc. Res. Otolaryngol.*, San Diego, USA, Feb 20-24, 2016

Soleimani M., **Funnell W.R.J.** & Decraemer W.F.: Analytical and finite-element modelling of the incudostapedial joint. *39th Midwinter Res. Mtg., Assoc. Res. Otolaryngol.*, San Diego, USA, Feb 20-24, 2016

GALIANA, Henrietta

Ranjbaran M., Katsarkas A. & Galiana H.L., (2016): Vestibular compensation in unilateral patients often causes both gain and time constant asymmetries in the VOR, *Frontiers in Computational Neuroscience* 10(26): 1-9. doi: [10.3389/fncom.2016.00026](https://doi.org/10.3389/fncom.2016.00026)

Haji Abolhassani I., Guitton D. & **Galiana H.L.**, (2016): Modelling eye-head coordination in multiple contexts without motor planning. *J. Neurophysiology* 116(4):1956-1985. doi: [10.1152/jn.00605.2015](https://doi.org/10.1152/jn.00605.2015)

Ranjbaran_M., Smith H.L. & **Galiana H.L.**, (2016): Automatic Classification of the Vestibulo-Ocular Reflex: Integration of data clustering and system identification, *IEEE Trans. Biomedical Engineering* 63(4):850-858. doi: [10.1109/TBME.2015.2477038](https://doi.org/10.1109/TBME.2015.2477038)

Patents

US Patent Awarded - GNL-HybELS: A mathematical tool for the analysis of multi-input hybrid systems with short output segment lengths; **H.L. Galiana** & A. Ghoreyshi; # 8886578 B2. 2015.

Provisional US patent - Methods and Systems for short data segment filtering and signal classification with improved noise tolerance; I. Haji-Abolhassani & **H.L. Galiana**; filed August 21, 2015, assigned US 62 / 207,984m, renewed August, 2016.

HAIDAR, Ahmad

Haidar A., Smaoui M.R., Legault L., Rabasa-Lhoret R., (2016): The role of glucagon in the artificial pancreas. *The Lancet Diabetes & endocrinology* 4(6):476. doi: [10.1016/S2213-8587\(16\)30006-7](https://doi.org/10.1016/S2213-8587(16)30006-7)

Maahs A., Buckingham B., Castle J., Cinar A., Damiano E., Dassau E., DeVries J., Doyle III F., Griffen F., **Haidar A.**, Heinemann L., Hovorka R., Jones T., Kollman C., Kovatchev B., Levy B., Nimri R., O'Neal D., Philip M., Renard E., Russell S., Weinzimer S., Zisser H., Lum J., (2016): Outcome measures for artificial pancreas clinical trials: a consensus report. *Diabetes care* 39(7):1175-9. doi: [10.2337/dc15-2716](https://doi.org/10.2337/dc15-2716)

Emami A., El Youssef J., Rabasa-Lhoret R., Pineau J., Castle J., **Haidar A.**, (2016): Modelling glucagon action in patients with type 1 diabetes. *IEEE Journal of Biomedical and Health Informatics* PP(99). doi: [10.1109/JBHI.2016.2593630](https://doi.org/10.1109/JBHI.2016.2593630)

Gingras V., **Haidar A.**, Messier V., Legault L., Ladouceur M., Rabasa-Lhoret R., (2016): A Simplified Semiquantitative Meal Bolus Strategy Combined with Single-and Dual-Hormone Closed-Loop Delivery in Patients with Type 1 Diabetes: A Pilot Study. *Diabetes technology & therapeutics* 18(8):464-71. doi: [10.1089/dia.2016.0043](https://doi.org/10.1089/dia.2016.0043)

Taleb N., Emami A., Suppere C., Messier V., Legault L., Chiasson J.L., Rabasa-Lhoret R., **Haidar A.**, (2016): Comparison of Two Continuous Glucose Monitoring Systems, Dexcom G4 Platinum and Medtronic Paradigm Veo Enlite System, at Rest and During Exercise. *Diabetes Technology & Therapeutics* 18(9):561-7. doi: [10.1089/dia.2016.0043](https://doi.org/10.1089/dia.2016.0043)

- Haidar A.**, (2016): The Artificial Pancreas: How Closed-Loop Control Is Revolutionizing Diabetes. *IEEE Control Systems* 36(5):28-47. doi: [10.1109/MCS.2016.2584318](https://doi.org/10.1109/MCS.2016.2584318)
- Taleb N., Emami A., Suppère C., Messier V., Legault L., Ladouceur M., Chiasson J.L., **Haidar A.**, Rabasa-Lhoret R., (2016): Efficacy of single-hormone and dual-hormone artificial pancreas during continuous and interval exercise in adult patients with type 1 diabetes: randomised controlled crossover trial. *Diabetologia* 59(12):2561-71. doi: [10.1007/s00125-016-4107-0](https://doi.org/10.1007/s00125-016-4107-0)
- Al Khalifah R.A., Suppère C., **Haidar A.**, Rabasa-Lhoret R., Ladouceur M., Legault L., (2016): Association of aerobic fitness level with exercise-induced hypoglycaemia in Type 1 diabetes. *Diabetic Medicine* 33(12):1686-90. doi: [10.1111/dme.13070](https://doi.org/10.1111/dme.13070)

Presentations/Conferences

Haidar A.: Closed-Loop Glucose Control in Type 1 Diabetes. *McGill Endo Retreat*, Montreal, Canada, Jun 2, 2016 (Invited Speaker)

Haidar A.: Developments in the Artificial Pancreas. *Canadian Diabetes Association Conference*, Ottawa, Canada, Oct 10, 2016 (Invited Speaker)

JUNCKER, David

- Lee R. E. C., Qasaimeh M. A., Xia X., **Juncker D.** and Gaudet S., (2016): NF- κ B signalling and cell fate decisions in response to a short pulse of tumour necrosis factor. *Scientific Reports* 6:39519. doi: [10.1038/srep39519](https://doi.org/10.1038/srep39519)
- MacNearney D., Mak B., Ongo G., Kennedy T. E., and **Juncker D.**, (2016) Nanocontact printing of proteins on physiologically soft substrates to study cell haptotaxis. *Langmuir* 32(50):13525-13533. doi: [10.1021/acs.langmuir.6b03246](https://doi.org/10.1021/acs.langmuir.6b03246)
- Jia B., Wee T.-L., Boudreau C. G., Berard D. J., Mallik A., **Juncker D.**, Brown C. M., and Leslie S. R., (2016): Parallelized Cytoindentation Using Convex Micropatterned Surfaces. *BioTechniques* 61:73- 82. doi: [10.2144/000114436](https://doi.org/10.2144/000114436)
- Olanrewaju A. O., Robillard A., Dagher M., and **Juncker D.**, (2016): Autonomous Microfluidic Capillary Circuits Replicated from 3D Printed Molds. *Lab on a Chip* 16:3804-3814. doi: [10.1039/c6lc00764c](https://doi.org/10.1039/c6lc00764c)
- Meunier A., Hernández-Castro J., Turner K., Veres T. and **Juncker D.** (2016): Combination of mechanical and molecular filtration for enhanced enrichment of circulating tumor cells. *Analytical Chemistry*, 88 (17):8510–8517. doi: [10.1021/acs.analchem.6b01324](https://doi.org/10.1021/acs.analchem.6b01324)

Presentations/Conferences

Olanrewaju A. and **Juncker D.**: Design rules for 3D-printed autonomous capillary circuits. Proceedings of *MicroTAS 2016, The Twentieth International Conference on Miniaturized Systems for Chemistry and Life Sciences*, Dublin, Ireland, October 9-13, 2016.

Dagher M., Kleinman M., Zonis R., Ng A., and **Juncker D.**: One-pot microsphere barcoding using fluorescent oligonucleotides. Proceedings of *MicroTAS 2016, The Twentieth International Conference on Miniaturized Systems for Chemistry and Life Sciences*, Dublin, Ireland, October 9-13, 2016.

Ongo G. and **Juncker D.**: 3D-Printed Monolithic Pinheads for Aligned, Microscale Patterning of Viscous Inks with Proteins and Cells. Proceedings of *MicroTAS 2016, The Twentieth International Conference on Miniaturized Systems for Chemistry and Life Sciences*, Dublin, Ireland, October 9-13, 2016.

Hernández-Castro J. A., Li K., Meunier A., Veres T., and **Juncker D.**: Fabrication of large area polymer microfilters via vacuum assisted UV micro-molding. Proceedings of *MicroTAS 2016, The Twentieth International Conference on Miniaturized Systems for Chemistry and Life Sciences*, Dublin, Ireland, October 9-13, 2016.

Meunier A., Hernández-Castro J. A., Turner K., Li K., Veres T. and **Juncker D.**: Antibody-functionalized microfabricated filters for enhanced enrichment of circulating tumor cells. Proceedings of *MicroTAS 2016, The Twentieth International Conference on Miniaturized Systems for Chemistry and Life Sciences*, Dublin, Ireland, October 9-13, 2016.

Tavakoli A., Li X., Ward B. and **Juncker D.**: Capillary microfluidic circuits to quantify antibody concentration for vaccine efficacy studies. Proceedings of *MicroTAS 2016, The Twentieth International Conference on Miniaturized Systems for Chemistry and Life Sciences*, Dublin, Ireland, October 9-13, 2016.

Juncker D.: Capillary Microfluidics By Rapid Prototyping. *Microfluidics Congress USA - Global Engage 2016*, Philadelphia, USA, Jul. 11-12, 2016 (invited talk).

Juncker D.: Capillarics: Microfluidic Circuits using Capillary Effects Designed and Built using a Library of Capillary Elements. *CMOS Emerging Technologies Research Conference 2016*, Microfluidic session Montreal, Canada, May 27 2016 (invited talk).

Juncker D.: Challenges and Opportunities for Ultrasensitive Immunoassays: Large Volume Capillarie Microfluidics and Digital Nanodot Arrays. *NEMB 2016, NanoEngineering for Medicine and Biology Conference*, Toward Point-Of-Care Diagnostics session, Houston, USA, Feb. 21-24 2016 (keynote speaker)

Xiao S. and **Juncker D.**: The Gastrointestinal Tract In-a-box: Miniaturized artificial gut to study the human gut microbiome. Poster presentation at the *World Congress on Targeting Microbiota*, Paris, France, October 17-19, 2016.

Sinha A., Ricoult S.G., Xu L., Kennedy T.E., and **Juncker D.**: Micropillar arrays selectively coated with humidified microcontact printing reveal cue-dependent traction forces and molecular recruitment within single cells. Poster presentation at *The 10th World Biomaterials Congress*, Montreal, Canada, May 17-22, 2016

Sinha A., Ricoult S.G., Xu L., Kennedy T.E., and **Juncker D.**: Nano-contact printing on ultra-soft substrates to investigate the impact of substrate stiffness on haptotaxis. *Biomaterials Congress*, May 17-22, 2016, Montreal, Canada.

Sinha A., Ricoult S.G., Xu L., **Juncker D.**, Kennedy T.E.: Micropillar arrays selectively coated with humidified microcontact printing reveal cue-dependent traction forces and molecular recruitment within single cells. Poster presentation at *The Canadian Association for Neuroscience- Association Canadienne des Neurosciences*, May 29-June 1, 2016, Toronto, Canada

MacNearney D., Mak B., and **Juncker D.**: Nano-contact Printing of Netrin-1 Digital Nano-dot Gradients on Ultra-soft Substrates: The Impact of Substrate Stiffness on Haptotaxis. Poster presentation at the *Neuroengineering Workshop*, Montreal, Quebec. May 2016.

Kleinman M., Dagher M., and **Juncker D.**: Spectral Read-out of Barcoded Microparticles and Application to Imaging of Protein Secretions. *Neuroengineering Workshop*, Montreal, Quebec, May 2016.

Zimny P., **Juncker D.**, and Reisner W.: Droplet Microfluidics for Compartmentalized Cell Lysis and Single Cell DNA Mapping. Poster presentation at the *2016 Symposium on Microscale Separations and Bioanalysis (MBS)*, Niagara-on-the-Lake, Canada, April 3-7, 2016

Patents

US patent application: "Fluidic circuits and methods for bacterial screening" – **David Juncker** and Ayo Olanrewaju, filed October 24, 2016 (US 15/332,650)

US patent awarded: "Methods and devices for multiplexed microarray microfluidic analysis of biomolecules" – **David Juncker** and Huiyan Li (US 9481945 B2)

KEARNEY, Robert E

Guarin Lopez D. and **Kearney R. E.** (2016): Identification of a Time-Varying Box-Jenkins Model of Intrinsic Joint Compliance. *IEEE Transactions on Neural Systems & Rehabilitation Engineering* 99. doi: [10.1109/TNSRE.2016.2619162](https://doi.org/10.1109/TNSRE.2016.2619162)

Jalaleddini S. K., Sobhani Tehrani E. and **Kearney R. E.** (2016): A Subspace Approach to the Structural Decomposition and Identification of Ankle Joint Dynamic Stiffness. *IEEE Trans Biomed Eng* 99. doi: [10.1109/TBME.2016.2604293](https://doi.org/10.1109/TBME.2016.2604293)

Presentations/Conferences

Amiri, P., MacLean L. and **Kearney R. E.**: Measurement of Shank Angle During Stance Using Laser Range Finders. *Conf Proc IEEE Eng Med Biol Soc*, Walt Disney World Resort, Orlando, FL, USA, August 16-20, 2016. doi: [10.1109/EMBC.2016.7591451](https://doi.org/10.1109/EMBC.2016.7591451)

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