

2015 Biomedical Engineering Publications, Conferences and Book Chapters

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CHANG, Thomas M.S.

- Guo C., Gynn M., **Chang T.M.S** (2015): Extraction of Superoxide Dismutase, Catalase and Carbonic Anhydrase from stroma-free red blood cell hemolysate for the preparation of the nanobiotechnological complex of PolyHemoglobin-Superoxide Dismutase-Catalase-Carbonic Anhydrase. *Artificial Cells, Nanomedicine, and Biotechnology* 43(3):157-162. doi: [10.3109/21691401.2015.1035479](https://doi.org/10.3109/21691401.2015.1035479)
- Chang T.M.S** (2015): Red Blood Cell replacement or nanobiotherapeutics with enhanced red blood cell functions? *Artificial Cells, Nanomedicine, and Biotechnology* 43(3):145-147. doi: [10.3109/21691401.2015.1047557](https://doi.org/10.3109/21691401.2015.1047557)

COLLINS, D. Louis

- Ansado, J., **Collins, D. L.**, Fonov, V., Garon, M., Alexandrov, L., Karama, S., ... and Beauchamp, M. H., (2015): A new template to study callosal growth shows specific growth in anterior and posterior regions of the corpus callosum in early childhood. *European Journal of Neuroscience* 42(1):1675-1684. doi: [10.1111/ejn.12869](https://doi.org/10.1111/ejn.12869)
- Beriault S., Xiao Y., **Collins D.L.** and Pike G.B., (2015): Automatic SWI Venography Segmentation Using Conditional Random Fields, *IEEE Transactions on Medical Imaging* 34(12):2478-2491. doi: [10.1109/tmi.2015.2442236](https://doi.org/10.1109/tmi.2015.2442236)
- Boccardi M., Bocchetta M., Morency F.C., **Collins D.L.**, Nishikawa M., Ganzola R., Grothe M.J., Wolf D., Redolfi A., Pievani M., Antelmi L., Fellgiebel A., Matsuda H., Teipel S., Duchesne S., Jack C.R., Frisoni G. B., (2015): Training labels for hippocampal segmentation based on the EADC-ADNI harmonized hippocampal protocol. *Alzheimer's & Dementia* 11(2): 175-183. doi: [10.1016/j.jalz.2014.12.002](https://doi.org/10.1016/j.jalz.2014.12.002)
- Cash D.M., Frost C., Iheme L. O., Ünay D., Kandemir M., Fripp J., Salvado O., Bourgeat P., Reuter M., Fischl B., Lorenzi M., Frisoni G. B., Pennek X., Pierson R., Gunter L., Senjem M. L., Jack Jr C. R., * Guizard N., * Malone V. S. Fonov, **D. L. Collins**, M. Modat, M. J. Cardoso, K. K. Leung, H. Wang, S. R. Das, P. A. Yushkevich, I. B., Fox N. C., Schott J. M., Ourselin S., (2015): Assessing atrophy measurement techniques in dementia: Results from the MIRIAD Atrophy Challenge. *NeuroImage*, 123:149-164. doi: [10.1016/j.neuroimage.2015.07.087](https://doi.org/10.1016/j.neuroimage.2015.07.087)
- Chakravarty M.M., Rapoport J., Giedd J., Raznahan A., Shaw P., **Collins D.L.**, Lerch J., and Gogtay N., (2015): Striatal shape abnormalities as novel neurodevelopmental endophenotypes in schizophrenia: a longitudinal study. *Human Brain Mapping* 36(4): 1458-69. doi: [10.1002/hbm.22715](https://doi.org/10.1002/hbm.22715)
- Coupé P, Fonov VS, Bernard C, Zandifar A, Eskildsen SF, Helmer C, Manjón JV, Amieva H, Dartigues JF, Allard M, Catheline G, **Collins DL**, (2015): Detection of Alzheimer's disease signature in MR images seven years before conversion to dementia: Toward an early individual prognosis. *Human Brain Mapping* 36 (12):4758-70.

doi: [10.1002/hbm.22926](https://doi.org/10.1002/hbm.22926)

Eskildsen SF, Coupé P, Fonov VS, Pruessner JC, **Collins DL** (2015): Alzheimer's Disease Neuroimaging Initiative. Structural imaging biomarkers of Alzheimer's disease: predicting disease progression. *Neurobiol Aging* 36:S23-31.

doi: [10.1016/j.neurobiolaging.2014.04.034](https://doi.org/10.1016/j.neurobiolaging.2014.04.034)

Faridi N, Karama S, Burgaleta M, White MT, Evans AC, Fonov V, **Collins DL**, Waber DP, (2015): Neuroanatomical Correlates of Behavioral Rating Versus Performance Measures of Working Memory in Typically Developing Children and Adolescents. *Neuropsychology* 29(1):82-91. doi: [10.1037/neu0000079](https://doi.org/10.1037/neu0000079)

Gerard IJ, Hall JA, Mok K, **Collins DL**, (2015): New protocol for skin landmark registration in image-guided neurosurgery: Technical note. *Neurosurgery* 11:376-81.

doi: [10.1227/neu.0000000000000868](https://doi.org/10.1227/neu.0000000000000868)

Gerard I. and **Collins D. L.**, (2015): An Analysis of Tracking Error in Image Guided Neurosurgery. *Int. J. Computer Assisted Radiology and Surgery* 10(10):1579-88.

doi: [10.1007/s11548-014-1145-2](https://doi.org/10.1007/s11548-014-1145-2)

Guizard N., Coupé P., * Fonov V. S., Manjón J. V., Arnold D. L., **Collins D.L.**, (2015): Rotation-invariant multi-contrast non-local means for MS lesion segmentation (RMNMS). *NeuroImage: Clinical* 8:376-89. doi: [10.1016/j.nicl.2015.05.001](https://doi.org/10.1016/j.nicl.2015.05.001)

*Guizard N., Fonov V. S., Garcia-Lorenzo D., Nakamura K., Aubert-Broche B., **Collins D.L.**, (2015): Spatio-temporal regularization for longitudinal registration to subject-specific 3D template. *PLoS ONE* 10(8):e0133352. doi: [10.1371/journal.pone.0133352](https://doi.org/10.1371/journal.pone.0133352)

Grover S. A., *Aubert-Broche B., Fetco D., **Collins D. L.**, Arnold D. L., Finlayson M., Banwell B. L., Motl R. W. E., Yeh A., (2015): Lower physical activity is associated with higher disease burden in pediatric multiple sclerosis. *Neurology* 85(19):1663-9.

doi: [10.1212/wnl.0000000000001939](https://doi.org/10.1212/wnl.0000000000001939)

Harmouche R., Subbanna N.K., **Collins D.L.**, Arnold D.L., Arbel T., (2015): Probabilistic multiple sclerosis lesion classification based on modelling regional intensity variability and local neighbourhood information. *IEEE Transactions on Biomedical Engineering* 62(5): 1281-92. doi: [10.1109/tbme.2014.2385635](https://doi.org/10.1109/tbme.2014.2385635)

Karimaghloo Z., Rivas H., **Collins D.L.**, Arnold D.L., Arbel T., (2015): Temporal Hierarchical Adaptive Texture CRF for Automatic Detection of Gadolinium-Enhancing Multiple Sclerosis Lesions in Brain MRI. *IEEE Transactions on Medical Imaging* 34(6):1227-41. doi: [10.1109/tmi.2014.2382561](https://doi.org/10.1109/tmi.2014.2382561)

Kersten-Oertel M., * Gerard I., Drouin S., Mok K., Sirhan D., Sinclair D. and **Collins D.L.**, (2015): Augmented reality in neurovascular surgery: feasibility and first uses in the operating room. *Int. J computer Assisted Radiology and Surgery*

10(11):1823-36. doi: [10.1007/s11548-015-1163-8](https://doi.org/10.1007/s11548-015-1163-8)

Khundrakpam B.S., Tohka J., Evans A.C., Brain Development Cooperative Group (**Collins D.L.** is one member), (2015): Prediction of brain maturity based on cortical thickness at different spatial resolutions, *Neuroimage* 111:350-9.

doi: [10.1016/j.neuroimage.2015.02.046](https://doi.org/10.1016/j.neuroimage.2015.02.046)

Menze B. H., Jakab A., Bauer S., Kalpathy-Cramer J., Farahani K., Kirby J., Burren Y., Porz N., Slotboom J., Wiest R., Lanczi L., Gerstner E., Weber M., Arbel T., Avants B. B., Ayache N., Buendia P., **Collins D. L.**, Cordier N., Corso J. J., Criminisi A., Das T., Delingette H., Demiralp C., Durst C. R., Dojat M., Doyle S., Festa J., Forbes F., Geremia E., Glocker B., Golland P., Guo X., Hamamci A., Iftekharuddin K. M., Jena R., John N. M., Konukoglu E., Lashkari D., Mariz A., Meier R., Pereira S., Precup D., Price S. J., Raviv T. R., Reza S. M. S., Ryan M., Sarikaya D., Schwartz L., Shin H., Shotton J., Silva C. A., Sousa N., Subbanna N. K., Szekely G., Taylor T. J., Thomas O. M., Tustison N. J., Unal G., Vasseur F., Wintermark M., Ye D. H., Zhao L., Zhao B., Zikic D., Prastawa M., Reyes M., Van Leemput K., (2015): The multimodal brain tumor image segmentation benchmark (BRATS). *IEEE Trans Med Imaging* 34(10):1993-2024.

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Nakamura K, Brown RA, Narayanan S, **Collins DL**, Arnold DL, (2015): Diurnal fluctuations in brain volume: Statistical analyses of MRI from large populations. *Neuroimag* 118: 126-132. doi: [10.1016/j.neuroimage.2015.05.077](https://doi.org/10.1016/j.neuroimage.2015.05.077)

Nitzsche B, Frey S, **Collins DL**, Seeger J, Lobsien D, Dreyer A, Kirsten H, Stoffel MH, Fonov VS, Boltze J, (2015): A stereotaxic, population-averaged T1w ovine brain atlas including cerebral morphology and tissue volumes. *Frontiers in Neuroanatomy* 9:69.

doi: [10.3389/fnana.2015.00069](https://doi.org/10.3389/fnana.2015.00069)

Pruett J.R., Kandala Jr. S., Hoertel S., Snyder A.Z., Elison J.T., Nishino T., Feczko E., Dosenbach N.U.F., Nardos B., Power J.D., Adeyemo B., Botteron K.N., McKinstry R.C., Evans A.C., Hazlett H.C., Dager S.R., Paterson S., Schultz R.T., **Collins D.L.**, Fonov V.S., Styner M., Gerig G., Da S., Kostopoulos P., Constantino J.N., Estes A.M., The IBIS Network, Petersen S.E., Schlaggar B.L., and Piven J., (2015): Accurate age classification of 6 and 12 month-old infants based on resting-state functional connectivity magnetic resonance imaging data. *Development & Cognitive Neuroscience* 12:123-133.

doi: [10.1016/j.dcn.2015.01.003](https://doi.org/10.1016/j.dcn.2015.01.003)

Rivaz H., **Collins D.L.**, (2015): Near real-time robust non-rigid registration of volumetric ultrasound images for neurosurgery. *Ultrasound in Medicine and Biology* 41(2):574-587. doi: [10.1016/j.ultrasmedbio.2014.08.013](https://doi.org/10.1016/j.ultrasmedbio.2014.08.013)

*Rivaz H., *Chen S.J.S., **Collins D.L.**, (2015): Automatic Deformable MR-Ultrasound Registration for Image-Guided Neurosurgery. *IEEE Transactions on Medical imaging* 34(2):366-80. doi: [10.1109/tmi.2014.2354352](https://doi.org/10.1109/tmi.2014.2354352)

- Rivaz H., **Collins D.L.**, (2015): Deformable Registration of Pre-Operative MR, Pre- Resection Ultrasound and Post- Resection Ultrasound: Comparing Three Approaches. *International Journal of Computer Assisted Radiology and Surgery* 10(7):1017-28. doi: [10.1007/s11548-014-1099-4](https://doi.org/10.1007/s11548-014-1099-4)
- Seuntjens J., Beaulieu L., **Collins D. L.**, Despres P., Devic S., Naqa El I., Nadeau J., Pike B., Reader A., (2015): MO-DE-BRA-04: The CREATE Medical Physics Research Training Network: Training of New Generation Innovators. *Med Phys* 42(6):3557-8. doi: [10.1118/1.4925339](https://doi.org/10.1118/1.4925339)
- Weier K., Banwell B., Cerasa A., **Collins D.L.**, Dogonowski A., H. Lassmann, A. Quattrone, M.A. Sahraian, Siebner H.R. and Sprenger T., (2015): The role of the cerebellum in multiple sclerosis. *Cerebellum* 14(3); 364-74. doi: [10.1007/s12311-014-0634-8](https://doi.org/10.1007/s12311-014-0634-8)
- *Xiao Y., *Fonov V.S., †Beriault S., Al Soubaie F., *Chakravarty M.M., Sadikot A.F., Pike G.B. and **Collins D.L.**, (2015): Multi-contrast unbiased MRI atlas of a Parkinson's disease population. *Int J Comput Assist Radiol Surg* 10(3):329-41. doi: [10.1007/s11548-014-1068-y](https://doi.org/10.1007/s11548-014-1068-y)
- *Xiao Y, *Fonov VS, †Beriault S, *Gerard I, Sadikot AF, Pike GB, **Collins DL**, (2015): Patch-based label fusion segmentation of brainstem structures with dual-contrast MRI for Parkinson's disease. *Int J Comput Assist Radiol Surg* 10(7):1029-41. doi: [10.1007/s11548-014-1119-4](https://doi.org/10.1007/s11548-014-1119-4)
- Zeighami, Y., Ulla, M., Iturria-Medina, Y., Dadar, M., Zhang, Y., Larcher K.M., Fonov, V., Evans, A.C., **Collins, D.L.**, Dagher, A., (2015): Network structure of brain atrophy in de novo Parkinson's Disease. *Elife* 4: e08440. doi: [10.7554/elife.08440](https://doi.org/10.7554/elife.08440)
- *Zelmann, R., Beriault S., Marinho M. M., Mok K., Hall J. A., Guizard N., Haegelen C., Olivier A., Pike G. B., and **Collins D. L.**, (2015): Improving recorded volume in mesial temporal lobe by optimizing stereotactic intracranial electrode implantation planning. *International journal of computer assisted radiology and surgery* 10(10):1599-615. doi: [10.1007/s11548-015-1165-6](https://doi.org/10.1007/s11548-015-1165-6)

Presntations/Conferences

- Aubert-Broche B., Fonov V., Weier K., Narayanan S., Arnold D.L., Banwell B., **Collins D.L.**, (2015): Is it possible to differentiate the impact of pediatric monophasic demyelinating disorders and multiple sclerosis after a first episode of demyelination?. *Spatio-temporal Image Analysis for Longitudinal and Time-Series Image Data: Lecture Notes in Computer Science* 8682:38-45. doi: [10.1007/978-3-319-14905-9_4](https://doi.org/10.1007/978-3-319-14905-9_4)
- Stoyanov, D., **Collins, D.L.**, Sakuma, I., Abolmaesumi, P., Jannin, P. (2015): Information processing in computer-assisted interventions: 5th international conference, 2014. *International Journal of Computer Assisted Rasiology and Surgery* 10(9):1355-1356.

doi: [10.1007/s11548-015-1280-4](https://doi.org/10.1007/s11548-015-1280-4)

Drouin S., Kersten-Oertel M., **Collins D. L.**, (2015): Interaction-based registration corection for improved augmented reality overlay in neurosurgery. Augmented Environments for Computer Assisted Interventions' (Proceedings of MICCAI AE-CAI Workshop 2015). *Lecture Notes in Computer Science* 9365:21–29. doi: [10.1007/978-3-319-24601-7_3](https://doi.org/10.1007/978-3-319-24601-7_3)

Kersten-Oertel M., Gerard I. J., Drouin S., Mok K., Sirhan D., Sinclair D. S., **Collins D. L.**, (2015): Augmented Reality for Specific Neurovascular Surgical Tasks. Augmented Environments for Computer Assisted Interventions' (Proceedings of MICCAI AE-CAI Workshop 2015) *Lecture Notes in Computer Science* 9365:92-103. doi: [10.1007/978-3-319-24601-7_10](https://doi.org/10.1007/978-3-319-24601-7_10)

Hyung Kim S., Fonov V., **Collins D.L.**, Gerig G., IBIS Network, Styner M.A., (2015): Shape index distribution based local surface complexity applied to the human cortex. *SPIE 9413, Medical Imaging 2015: Image Processing*. doi: [10.1117/12.2081560](https://doi.org/10.1117/12.2081560)

Nakamura K., Fonov V.S., Guizard N., Narayanan S., Arnold D.L. & **Collins D.L.**, Extending BrainWeb for Evaluating Methods of Brain Volume Change: Simulation of Central and Peripheral Brain Atrophy. *International Society for Magnetic Resonance in Medicine (ISMRM)*, Toronto, ON, Canada, May 30 – Jun 5, 2015

De Leener B., Roux A., Touati J., Levy S., Taso M., Fonov V., **Collins D.L.**, Callot V. & Cohen-Adad J., Template-based analysis of multi- parametric MRI data with the Spinal Cord Toolbox. *International Society for Magnetic Resonance in Medicine (ISMRM)*, Toronto, ON, Canada, May 30 – Jun 5, 2015

Moreno, D.A., Jesson, A., Subbanna, N., Karimaghaloo, Z., Arnold, L.D., **Collins, D.L.** & Arbel, T., Diffeomorphic Registration of Healthy Tissue Priors to Brain MRI for Pathology Segmentation. *IEEE International Symposium on Biomedical Imaging: From Nano to Macro*, New York, USA, April 16-19, 2015

Barlow-Krelina E., Lysenko M., Akbar N., Aubert-Broche B., **Collins D.L.**, Yeh E.A., Banwell B. & Till C., :Neuropsychological assessment in pediatric-onset multiple sclerosis patients: Sensitivity of hand dexterity to TI and T2 lesion volume. *Neuroinflammation Symposium* Toronto, ON, Canada, April 30 – May 1, 2015

Barlow-Krelina E., Yeh E.A., Lysenko M., Akbar N., Aubert-Broche B., **Collins D.L.**, Banwell B. & Till C.: The role of physical activity on brain volume and cognitive efficiency in pediatric-onset multiple sclerosis: Comparing strenuous and moderate activity. *Canadian Psychological Association Convention*, Ottawa, ON, Canada, June 4-6, 2015

Barlow-Krelina E., Lysenko M., Akbar N., Aubert-Broche B., **Collins D.L.**, Yeh E.A., Banwell B. & Till C.: Neuropsychological assessment in pediatric-onset multiple sclerosis patients: Sensitivity of hand dexterity to TI and T2 lesion volume. *Jean Piaget Society Conference*, Toronto, ON, Canada, June 4-6, 2015

Zeighami Y., Ulla M., * Dadar M., Iturria-Medina Y., Larcher K., Evans A. C., **Collins D. L.**, Dagher A.,: Parkinson's disease Targets an Intrinsic Brain Network. *Organization for Human Brain Mapping (OHBM)*, Honolulu, Hawaii, USA, June 14-18, 2015

Orban P., Urchs S., Savard M., Madjar C., Tam A., Theroux L., Evans A., Rosa-Neto P., Collins L., Poirier J., Breitner J., Bellec P., and the PREVENT-AD Research Group: Functional brain network subtypes are associated with AD biomarkers in an again high-risk cognitvely normal cohort – the Prevent- AD study. *Alzheimer's Association (AAIC)*, Washington D.C., USA, July 18-23, 2015

Barlow-Krelina E., Lysenko M., Akbar N., Aubert-Broche B., **Collins D.L.**, Yeh E.A., Banwell B. & Till C.: Physical activity in patients with pediatric-onset multiple sclerosis: Associations with brain volume and cognitive efficiency. *American Psychological Association Convention*, Toronto, ON, Canada, August 6-9, 2015

Giraud R., Ta V., Papadakis N., **Collins D.L.**, Coupé P. : Optimisation de l'algorithme PatchMatch pour la segmentation de structures anatomiques. *XXVe Colloque GRETSI - Traitement du Signal et des Images Lyon*, Lyon, France, September 8-11, 2015

Patents

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.

Maftoon N, **Funnell WRJ**, Daniel SJ & Decraemer WF (2015): Finite-element modelling of the response of the gerbil middle ear to sound. *Journal of the Association for Research in Otolaryngology* 16(5): 547-567. doi:[10.1007/s10162-015-0531-y](https://doi.org/10.1007/s10162-015-0531-y)

Akinpelu OV, **Funnell WRJ** & Daniel SJ (2015): Detection of otoacoustic emissions in chinchilla when the middle ear contains liquid. *Laryngoscope* 125(4): E138-E142. doi:[10.1002/lary.24914](https://doi.org/10.1002/lary.24914)

Presentations/Conferences

"Finite-element modelling of the middle ear". 7th International Symposium on Middle-Ear Mechanics in Research and Otology, Aalborg, Denmark. July 1-5, 2015. (Invited Keynote Speaker).

GALIANA, Henrietta

Ranjbaran M., Smith H.L. & **Galiana H.L.** (2015), Automatic Classification of the Vestibulo-Ocular Reflex: Integration of data clustering and system identification, *IEEE Transactions on Biomedical Engineering* 63(4): 850-858. doi:[10.1109/tbme.2015.2477038](https://doi.org/10.1109/tbme.2015.2477038)

Stefanovic P. and **Galiana H.L.** (2015), Efferent feedback in an adaptive spinal-like controller: Reaching with perturbations. *IEEE Trans. Neural Systems and Rehabilitation Engineering*, 24(1): 140-150. doi: [10.1109/TNSRE.2015.2439515](https://doi.org/10.1109/TNSRE.2015.2439515)

Presentations/Conferences

“How many ways can you stop a gaze shift? Revisiting brainstem networks”, 2015 Gordon Research Conference on Eye Movements, Bentley University, Waltham, MA, July 26-31, 2015 (Invited Speaker)

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**

JUNCKER, David

Tamayol A., Najafabadi A. H., Aliakbarian B., Arab-Tehrany E., Akbari M., Annabi N., **Juncker D.**, and Khademhosseini A., (2015): Hydrogel templates for rapid manufacturing of bioactive fibers and 3D constructs. *Advanced Healthcare Materials*, 4(14):2146-2153. doi: [10.1002/adhm.201570082](https://doi.org/10.1002/adhm.201570082)

Tekwa E. W., Nguyen D., **Juncker D.**, Loreau M., and Gonzalez A., (2015): Patchiness in a Microhabitat Chip Affects Evolutionary Dynamics of Bacterial Cooperation. *Lab on a Chip*, 15(18):3723-3729. doi: [10.1039/c5lc00576k](https://doi.org/10.1039/c5lc00576k)

Sloan T., Qasaimeh M. A., **Juncker D.**, Yam P. and Charron F., (2015): Integration of shallow gradients of Shh and Netrin-1 guides commissural axons. *PLOS Biology*, 13:e1002119. doi: [10.1371/journal.pbio.1002119](https://doi.org/10.1371/journal.pbio.1002119)

Ricoult S. G., Kennedy T. E., and **Juncker D.**, (2015): Substrate-bound Protein Gradients to Study Haptotaxis. *Frontiers in Bioengineering and Biotechnology*, 3. doi: [10.3389/fbioe.2015.00040](https://doi.org/10.3389/fbioe.2015.00040)

Li H., Bergeron S., Annis M. G., Siegel P. M., and **Juncker D.** (2015). Serial analysis of 38 proteins during the progression of human breast tumor in mice using an antibody colocalization microarray. *Molecular & Cellular Proteomics*, 14(4):1024-1037.
doi: [10.1074/mcp.m114.046516](https://doi.org/10.1074/mcp.m114.046516)

Zhou G., Bergeron S., and **Juncker D.** (2015): High performance low-cost antibody microarrays using enzyme mediated silver amplification. *Journal of Proteome Research*, 14(4):1872-1879. doi: [10.1021/pr501259e](https://doi.org/10.1021/pr501259e)

Roman H. N., and **Juncker D.** and Lauzon A-M. (2015): A microfluidic chamber to study the dynamics of muscle contraction. *Analytical Chemistry*, 87(5):2582-2587.
doi: [10.1021/ac503963r](https://doi.org/10.1021/ac503963r)

Presentations/Conferences

Olanrewaju A., Ng A., Robillard A., and **Juncker D.**: 3D-Printed Capillaries Circuits For Ultrarapid Bacteria Detection Using Packed Beard Columns Assembled On-The-Spot. Proceedings of *MicroTAS 2015, 9th International Conference on Miniaturized Systems for Chemistry and Life Sciences*, Gyeongju, Korea, October 25-29, 2015.

Zhou G. and **Juncker D.**: Scalable multiplex digital assays with automated image acquisition and analysis. Proceedings of *MicroTAS 2015, The nineteenth International Conference on Miniaturized Systems for Chemistry and Life Sciences*, Gyeongju, Korea, October 25-29, 2015.

Ricoult S. G, Xu L., Sinha A., Kennedy T. E., and **Juncker D.**: Patterned Mechanotransduction Sensor to Study Traction Force of Single Cells Exposed to Two Distinct Cues Simultaneously. Proceedings of *MicroTAS 2015, The nineteenth International Conference on Miniaturized Systems for Chemistry and Life Sciences*, Gyeongju, Korea, October 25-29, 2015.

Additive manufacturing at the microscale: Microprobes, microfluidics and living tissue constructs. *Additive Manufacturing Seminar Series*, McGill University, November 17, 2015 (Invited Speaker)

Microfluidics-enabled technologies for biomarker discovery and point-of-care diagnostics: from research to spin-off. *BioConnect*, Montreal, Quebec, Canada, November 6, 2015 (Invited Speaker)

Microfluidics and digital nanodot arrays for ultrasensitive low cost and multiplexed single molecule immunoassays. *Seoul National University, Department of Chemistry*, Seoul, Korea, October 30, 2015 (Invited Speaker)

Targeted Discovery of Subtype-Differentiating Biomarkers for Early Diagnosis of Breast Cancer. Human Proteome Project Plasma session, *HUPO 2015, Human Proteome Organization Annual Conference*, Vancouver, Canada, Sept. 25 - Oct. 1, 2015 (Invited Speaker)

Planar antibody microarrays for plasma proteomics. Human Proteome Project Plasma session, *HUPO 2015, Human Proteome Organization Annual Conference*, Vancouver, Canada, Sept. 25 - Oct. 1, 2015. (Invited Speaker)

Microfluidics & Tissue Engineering in 1D, 2D & 3D, University of Toronto, Department of Mechanical Engineering, Toronto, Canada, August 26, 2015 (Invited Speaker)

Inventing, developing and applying microfluidic- and nano-technologies to neuroscience. *Canadian Undergraduate Neuroscience Conference (CUNC), Canadian Association for Neuroscience and University of Alberta's Neuroscience and Mental Health Institute*, Edmonton, Canada, June 23, 2015 (Invited Speaker)

Microfluidic technologies for addressing key challenges in biomedical research and diagnostics. *Journée Microfluidique*, Laval University, May 27 2015 (Keynote presentation)

Meunier A., Turner K., Alejandro Hernández-Castro J., Veres T., and **Juncker D.**: Multi Parametric Isolation of Circulating Tumor Cells. Accepted to *Annual Meeting of the Biomedical Engineering Society (BMES)*, Tampa, Florida, USA, October 7-10, 2015

Laforte V., Gambaro K., Lo P. S., Dumeaux V., Rivet A., Mouhanna J., Kuta V., Park M., Basik M., Meterissian S., **Juncker D.**: Targeted discovery of subtype-differentiating biomarkers for early diagnosis of breast cancer. *Human Proteome Organization 14th Annual World Congress*, Vancouver, British Columbia, Canada, September 27-30 2015.

Laforte V., Lo P. S., Gambaro K., Mouhanna J., **Juncker D.**: Antibody Colocalization Microarray for quantifying 108 proteins in a droplet of blood at femtomolar concentration. *Human Proteome Organization 14th Annual World Congress*, Vancouver, British Columbia, Canada, September 27-30, 2015.

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Presentations/Conferences

Global Commercialization Conference NJ Tech Council's, December 15, 2015 (Key Speaker & Chief Guest)

Health Food Section. "Probiotics and cancer" *Natural Health Product Research Society Meeting*, London, Canada, August 2015 (Keynote Speaker)

China Canada Biomedicine New Technology Forum, GP health Care Meeting Shandong, China, October 23-25, 2015 (Keynote Speaker)

Patents

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“Injectable purine-based sponges as a potential therapy to target remyelination post-spinal cord injuries”, Pacificchem, HI, USA. December 15-20 2015, (Invited Speaker)

“Surface-enhanced Raman scattering nanoparticles for the detection and mapping of cardiovascular inflammatory biomarkers”, Pacificchem, HI, USA. December 15-20, 2015. (Invited Speaker)

“Injectable and in-situ rapidly gelling chitosan-based biomaterials: A potential therapy for remyelination post-spinal cord injuries”, Porous and Powder Materials 2015 (PPM 2015), Izmir, Turkey September 15-18, 2015, (Invited Speaker)

“Rapidly Gelling Injectable Sponges as a Potential Therapy to Target Remyelination Post-Spinal Cord Injuries”: Bioinspired molecular assemblies as protective and delivery systems, Orléan, France. September 9 to 7, 2015 (Keynote speaker)

“The Evolutionary Use of Chitosan Sponges and Nanoparticles in Bone Engineering”, Shriners Hospital for Children, Montreal, November 10, 2015.

“Bioinspired Materials and Devices for Enabling Technology Platforms. McGill Institute for Advanced Materials”, NSERC-CREATE in integrated Sensors and Systems, McGill University, November 17, 2015.

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