

## 1. Datos de Contacto:

**Nombre:** Marcelo Andia K.

**Cargo académico:** Profesor Asistente

**Departamento o División:** Departamento de Radiología

**Nombre de su laboratorio:** Centro de Imágenes Biomédicas UC

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## 2. Líneas de Investigación:

Magnetic Resonance Imaging, Molecular Imaging, Atherosclerosis, Inflammation, Tissue perfusion.

## 3. Proyectos de Investigación:

1. 2016 – 2020. *Associate Researcher*, Magnetic resonance imaging technology for aging related diseases: brain, heart and vessels. *Anillo ACT (US650K)*, P.I.: *Dr. Pablo Irrázaval*, Electrical Engineering Department, PUC.
2. 2014 – 2018. *Co-Investigator*, Non-invasive 3D full-field quantification of cardiovascular 4D flow MRI. *Fondecyt 1141036 (US240K)*, P.I.: *Dr. Sergio Uribe*, Radiology Department, PUC.
3. 2014 – 2017. *Co-Investigator*, Studies on the mechanisms involved in the pathogenesis of cocaine-associated brain perfusion defects: the role of endothelial dysfunction and activation of haemostatic system. *Fondecyt 1141051 (US280K)*, P.I.: *Dr. Jaime Pereira*, Haematology Department, PUC.
4. 2014 – 2016. *Co-Investigator*, Design of a laboratory non-invasive, non-destructive procedure for copper sulphide heap leaching process optimization. *Fondecyt 11130540 (US140K)*, P.I.: *Dr. Alvaro Videla*, Mining Engineering Department, PUC.
5. 2013 – 2016. *Co-Investigator*, Design of a health communication system for the elderly and their support network. *Fondef IDeA 13i10210 (US240K)*, P.I.: *Dr. Sergio Godoy*, Communication Faculty, PUC.
6. 2013 – 2016. *Principal Investigator*, Development of contrast-free magnetic resonance angiography and tissue perfusion techniques. *Fondecyt 1130379 (US180K)*
7. 2013 – 2016. *Co-Investigator*, Topologically flexible prior shape knowledge for level set segmentations. *Fondecyt Regular 1130887 (US140K)*, P.I.: *Dr. Cristian Tejos*, Electrical Engineering Department, PUC.
8. 2013 – 2015. *Co-Investigator*, f-MRI plus EEG implementation for the study of brain conditioning throws brain-computer interface. *Interdisciplinary VRI Grant. Vicerrectoría de Investigación, Pontificia*

Universidad Católica de Chile (US20K), P.I.: Dr. Cristian Tejos, Electrical Engineering Department, PUC.

9. 2012 – 2013. *Principal Investigator*, International network for research on cardiovascular magnetic resonance, King's College London – Biomedical Imaging Centre UC. *Redes120026 (US35K)*

#### 4. Publicaciones:

1. Arboleda C, Garcia MP, Aguirre-Reyes D, Tejos C, Muñoz L, Miquel JF, Irarrazaval P, **Andia ME**, Uribe S. Total liver fat quantification using a 3D respiratory self-navigated Magnetic Resonance Imaging sequence. *Magn Reson Med* 2015 [in press].
2. Aguirre-Reyes DF, Sotelo JA, Arab JP, Arrese M, Tejos R, Irarrazaval P, Tejos C, Uribe SA, **Andia ME**. Intrahepatic portal vein blood volume estimated by non-contrast Magnetic Resonance Imaging for the assessment of portal hypertension. *Magn Reson Imaging* 2015;33(8):970-7.
3. Passacquale G, Phinikaridou A, Warboys C, Cooper M, Lavin B, Alfieri A, **Andia ME**, Botnar RM, Ferro A. Aspirin-induced histone acetylation in endothelial cells enhances synthesis of the secreted isoform of netrin-1 thus inhibiting monocyte vascular infiltration. *Br J Pharmacol* 2015; 172(14):3548-64.
4. Pinto JM, Arrieta C, **Andia ME**, Uribe S, Ramos-Grez J, Vargas A, Irarrazaval P, Tejos C. Sensitivity analysis of geometric errors in additive manufacturing medical models. *Med Eng Phys* 2015; 37(3):328-34.
5. Hussain T, Henningsson M, Butzbach B, Lossnitzer D, Greil GF, **Andia ME**, Botnar RM. Combined coronary lumen and vessel wall MRI with i-T2prep: influence of nitroglycerin. *Int J Cardiovasc Imaging* 2015;31(1):77-82.
6. Bigalke B, Phinikaridou A, **Andia ME**, Cooper MS, Schuster A, Wurster T, Onthank D, Münch G, Blower P, Gawaz M, Nagel E, Botnar RM. PET/CT and MR imaging biomarker of lipid-rich plaques using [<sup>64</sup>Cu]-labeled scavenger receptor (CD68-Fc). *Int J Cardiol* 2014;177(1):287-291.
7. Miras AD, Seyfried F, Phinikaridou A, **Andia ME**, Christakis I, Spector AC, Botnar RM, Le Roux CW. Rats fed diets with different energy contribution from fat do not differ in adiposity. *Obesity Facts* 2014;7(5):302-310.
8. Cadiz RF, Muñoz C, Tejos C, **Andia ME**, Uribe S, Irarrazaval P. Quantization error in magnetic resonance imaging. *Concepts Magn Reson* 2014;43A(3):79-89.
9. **Andia ME**, Saha P, Jenkins J, Modarai B, Wiethoff AJ, Phinikaridou A, Grover SP, Patel AS, Schaeffter T, Smith A, Botnar RM. Fibrin targeted MRI allows in-vivo quantification of thrombus fibrin content and identifies thrombi amenable for thrombolysis. *Arterioscler Thromb Vasc Biol* 2014; 34(6):1193-1198.
10. Phinikaridou A, **Andia ME**, Indermuehle A, Onthank DC, Cesati RR, Smith A, Robinson SP, Saha P, Botnar RM. Vascular remodelling and plaque vulnerability in a rabbit model of atherosclerosis: Comparison of delayed-

- enhancement MR imaging with an elastin-specific contrast agent and unenhanced black-blood MR imaging. *Radiology* 2014;271(2):390-399.
11. Protti A, Dong X, **Andia ME**, Yu B, Dokukina K, Chaubey S, Phinikaridou A, Vizcay-Barrena G, Taupitz M, Botnar RM, Shah AM. Assessment of inflammation with a very small iron-oxide particle in a murine model of reperfused myocardial infarction. *J Magn Reson Imaging* 2014;39(3):598-608.
  12. Phinikaridou A, **Andia ME**, Lacerda S, Lorrio S, Makowski MR, Botnar RM. Molecular MRI of Atherosclerosis. *Molecules* 2013;18(11):14042-14069.
  13. Bigalke B, Phinikaridou A, **Andia ME**, Cooper MS, Schuster A, Schönberger T, Griessinger CM, Wuster T, Onthank D, Ungerer M, Gawaz M, Nagel E, Botnar RM. Positron Emission Tomography/Computed Tomographic and Magnetic Resonance Imaging in a Murine Model of Progressive Atherosclerosis Using <sup>64</sup>Cu-Labeled Glycoprotein VI-Fc. *Circ Cardiovasc Imaging* 2013; 6(6):957-964.
  14. **Andia ME**\*, Phinikaridou A\*, Passacquale G, Ferro A, Botnar RM. Noninvasive MRI monitoring of the effect of interventions on endothelial permeability in murine atherosclerosis using an albumin-binding contrast agent. *J Am Heart Assoc* 2013; 2(5):e000402.
  15. **Andia ME**\*, Saha P\*, Modarai B, Blume U, Humphries J, Patel AS, Phinikaridou A, Evans CE, Mattock K, Grover S, Ahmad A, Lyons OT, Attia RQ, Renne T, Premaratne S, Wiethoff AJ, Botnar RM, Schaeffter T, Waltham M, Smith A. Magnetic resonance T1-relaxation time of venous thrombus is determined by iron processing and predicts susceptibility to lysis. *Circulation* 2013; 128(7):729-736.
  16. Milovic C, Oses C, Villalon M, Uribe S, Lizama C, Prieto C, **Andia ME**, Irrarrazaval P, Tejos C. Calcium (Ca<sup>2+</sup>) waves data calibration and analysis using image processing techniques. *BMC Bioinformatics* 2013;14:162-175.
  17. **Andia ME**\*, Phinikaridou A\*, Saha P, Modarai B, Smith A, Botnar RM. In vivo magnetization transfer and diffusion weighted MRI detects thrombus composition in a mouse model of deep vein thrombosis. *Circ Cardiovasc Imaging* 2013;6:433-440.
  18. Meneses L, Fava M, Diaz P, **Andia ME**, Tejos C, Irrarrazaval P, Uribe S. Embolization of incompetent pelvic veins is feasible as treatment for recurrent varicose veins in lower limbs and pelvic congestion syndrome. *Cardiovasc Intervent Radiol* 2013; 36(1):128-32.
  19. **Andia ME**, Henningsson M, Hussain T, Phinikaridou A, Protti A, Greil G, Botnar RM. Flow-independent 3D whole heart vessel wall imaging using an interleaved T2-preparation acquisition. *Magn Reson Med* 2013; 69(1):150-7.
  20. Phinikaridou A, **Andia ME**, Shah AM, Botnar R. Advances in Molecular Imaging of Atherosclerosis and Myocardial Infarction: Shedding New Light on In-vivo Cardiovascular Biology. *Am J Physiol Heart Circ Physiol* 2012; 303(12):1397-1410.
  21. Uribe S, Cadavid L, Hussain T, Parra R, Urcelay G, Heusser F, **Andia ME**, Tejos C, Irrarrazaval P. Cardiovascular magnetic resonance findings in a pediatric population with isolated left ventricular non-compaction. *J Cardiovasc Magn Reson* 2012; 14(1):1-9.

22. Prieto C, **Andia ME**, von Bary C, Schaeffter T, Botnar RM. Accelerating three-dimensional molecular cardiovascular MR imaging using compressed sensing. *J Magn Reson Imaging* 2012; 36(6):1362-71.
23. Phinikaridou A, **Andia ME**, Protti A, Indermuehle A, Shah A, Smith A, Warley A, Botnar RM. Non-invasive MRI evaluation of endothelial permeability in murine atherosclerosis using an albumin-binding contrast agent. *Circulation* 2012; 126(6):707-719.
24. Wurster T, Stellos K, Geisler T, Seizer P, **Andia ME**, Schuster A, May AE, Melms A, Gawaz M, Bigalke B. Expression of stromal-cell-derived factor-1 (SDF-1): a predictor of ischaemic stroke? *Eur J Neurol* 2012;19(3):395-401.
25. **Andia ME**, Botnar RM. Arterial spin labeling angiography using a Triple Inversion Recovery prepulse. *Magn Reson Med* 2012; 67(2):477-83.
26. Meneses L, Uribe S, Tejos C, **Andia ME**, Fava M, Irrazaval P. Using magnetic resonance phase-contrast velocity mapping for diagnosing of pelvic congestion syndrome. *Phlebology* 2011; 26(4):157-161.
27. Bertran E, Heise K, **Andia ME**, Ferreccio C. Gallbladder Cancer: Incidence and survival in a high-risk area of Chile. *Int J Cancer* 2010; 127(10):2446-2454.