

## **Dr Caroline Roney**

MMath, MRes, PhD

School of Engineering and Materials Science  
Queen Mary University of London  
Mile End Road  
London E1 4NS

tel: +44 (0)20 7882 8732  
email: c.roney@qmul.ac.uk web: www.sems.qmul.ac.uk/c.roney

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### **2024**

#### **Does Spatio-Temporal Dispersion Indicate a Patient-unique Fingerprint or a Generic Characteristic of Persistent Atrial Fibrillation?.**

Roney C and Honarbakhsh S. *Heart Rhythm*. Elsevier.

#### **High Prevalence of New Clinically Significant Findings in Patients With Embolic Stroke of Unknown Source Evaluated by Cardiac Magnetic Resonance Imaging.**

Kotadia ID, O'Dowling R, Aboagye A, Crawley RJ, Bodagh N, Gharaviri A, O'Hare D, Solis-Lemus JA, Roney CH, Sim I, Ramsey D, Newby D, Chiribiri A, Plein S, Sztriha L, Scott P, Masci P-G, Harrison J, Williams MC, Birns J, Somerville P, Bhalla A, Niederer S, O'Neill M and Williams SE. *Journal of The American Heart Association* vol. 13, (3). Wolters Kluwer.

#### **Spatial and temporal relationship between focal and rotational activations and their relationship to structural remodeling in patients with persistent AF.**

Honarbakhsh S, Roney C, Wharmby A, Vidal Horrach C and Hunter RJ. *Heart Rhythm*. Elsevier.

### **2023**

#### **Constructing bilayer and volumetric atrial models at scale.**

Roney CH, Lemus JAS, Barrera CL, Zolotarev A, Ulgen O, Kerfoot E, Bevis L, Misghina S, Horrach CV, Jaffery OA, Ehnesh M, Rodero C, Dharmapranji D, Ríos-Muñoz GR, Ganeshan A, Good WW, Neic A, Plank G, Hopman LHGA, Gtke MJW, Honarbakhsh S, Narayan SM, Vigmond E and Niederer S. *Interface Focus* vol. 13, (6) 20230038-20230038. The Royal Society.

#### **A Semi-automatic Pipeline for Generation of Large Cohorts of Four-Chamber Heart Meshes.**

Strocchi M, Rodero C, Roney CH, Mendonca Costa C, Plank G, Lamata P and Niederer SA. *Springer Nature*.

#### **Deep neural network architectures for cardiac image segmentation.**

El-Taraboulsi J, Cabrera CP, Roney C and Aung N. *Artificial Intelligence in The Life Sciences* vol. 4,. Elsevier.

#### **Abstract 13321: Novel Regional Analysis of Left Atrial Strain From Computed Tomography Separates Patients With Persistent versus Paroxysmal Atrial Fibrillation.**

Sillett C, Razeghi O, Lee A, Solis Lemus JA, Roney C, Ganeshan P, Feng R, Chubb H, NIEMAN K, Rogers AJ, Rajani R, Narayan SM and Niederer SA. *Circulation* vol. 148, (Suppl\_1). Wolters Kluwer.

#### **AF and in-hospital mortality in COVID-19 patients.**

Kotadia ID, Dias M, Roney C, Parker RA, O Dowling R, Bodagh N, Lemus-Solis J-A, O Hare D, Sim I, Newby D, Niederer S, Birns J, Sommerville P, Bhalla A, O Neill M and Williams SE. *Heart Rhythm O2* vol. 4, (11) 700-707. Elsevier.

#### **In silico batrial fibrosis ablation improves atrial fibrillation outcome.**

Roney C, Alonso JSL, Sim I, Ulgen O, Rodero C, Strocchi M, Kotadia I, Honarbakhsh S, Narayan S, Plank G, Vigmond E, Williams SE and Niederer S. *Ep Europace* vol. 25, (Suppl 1). Oxford University Press (Oup).

**A personalized real-time virtual model of whole heart electrophysiology.**

Gillette K, Gsell MAF, Strocchi M, Grandits T, Neic A, Manninger M, Scherr D, Roney CH, Prassl AJ, Augustin CM, Vigmond EJ and Plank G. *Ep Europace vol. 25, (Suppl 1) euad122.541-euad122.541*. Oxford University Press.

**Atrial fibrillation and in-hospital mortality in Covid-19 patients.**

Kotadia I, Dias M, Roney C, Parker RA, O'dowling R, O'hare D, Solis-Lemus JA, Sim I, Birns J, Sommerville P, Bhalla A, Newby D, Niederer S, O'neill M and Williams SE. *Ep Europace vol. 25, (Suppl 1)*. Oxford University Press (Oup).

**In Atrial Fibrillation, Omnipolar Voltage Maps More Accurately Delineate Scar Than Bipolar Voltage Maps.**

Butcher C, Roney C, Wharmby A, Ahluwalia N, Chow A, Lambiase PD, Hunter RJ and Honarbakhsh S. *Jacc Clinical Electrophysiology vol. 9, (8) 1500-1512*. Elsevier.

**Evaluation of an open-source pipeline to create patient-specific left atrial models: A reproducibility study.**

Solís-Lemus JA, Baptiste T, Barrows R, Sillett C, Gharaviri A, Raffaele G, Razeghi O, Strocchi M, Sim I, Kotadia I, Bodagh N, O Hare D, O Neill M, Williams SE, Roney C and Niederer S. *Computers in Biology and Medicine vol. 162, 107009-107009*. Elsevier.

**PO-03-103 OMNIPOLAR VOLTAGE MAPPING DURING AF EFFECTIVELY OVERCOMES THE IMPACT WAVEFRONT COLLISION AND FRACTIONATION HAS ON BIPOLAR VOLTAGE MAPS AND MORE EFFECTIVELY IDENTIFIES SITES OF PV RECONNECTION AT PREVIOUS WIDE AREA CIRCUMFERENTIAL LINES COMPARED TO BIPOLAR VOLTAGE MAPS.**

Butcher C, Roney CH, Ahluwalia N, Wharmby AL, Chow AW, Lambiase PD, Hunter RJ and Honarbakhsh S. *Heart Rhythm vol. 20, (5)*. Elsevier.

**PO-01-095 REGIONAL DIFFERENCES IN ATRIAL FIBER STRAINS IN HEART FAILURE PATIENTS WITH AND WITHOUT ATRIAL FIBRILLATION.**

Sillett C, Razeghi O, Lee AW, Solis-Lemus JA, Roney CH, Ennis D, Rinaldi CA, Rajani R and Niederer SA. *Heart Rhythm vol. 20, (5)*. Elsevier.

**PO-01-215 ATRIAL FIBRILLATION OUTCOME IS IMPROVED BY BIATRIAL SUBSTRATE ABLATION IN A LARGE VIRTUAL TRIAL.**

Roney CH, Solis-Lemus JA, Honarbakhsh S, Sim I, Rodero C, Strocchi M, Kotadia I, Narayan SM, Plank G, Vigmond EJ, Williams SE and Niederer SA. *Heart Rhythm vol. 20, (5) s164-s165*. Elsevier.

**PO-02-172 CONDUCTION VELOCITY AND CONDUCTION VELOCITY DYNAMICS IN THE LEFT ATRIUM ARE IMPACTED BY STRUCTURAL AND AUTONOMIC MODULATION AND SITES OF CONDUCTION VELOCITY HETEROGENEITY CORRELATE TO RE-ENTRY ACTIVITY IN ATRIAL FIBRILLATION.**

Honarbakhsh S, Roney CH, Wharmby AL, Abbass H, Whittaker-Axon S, Lambiase PD and Hunter RJ. *Heart Rhythm vol. 20, (5) s300-s301*. Elsevier.

**Atrial fibrillation ablation outcome prediction with a machine learning fusion framework incorporating cardiac computed tomography.**

Razeghi O, Kapoor R, Alhusseini MI, Fazal M, Tang S, Roney CH, Rogers AJ, Lee A, Wang PJ, Clopton P, Rubin DL, Narayan SM, Niederer S and Baykaner T. *Journal of Cardiovascular Electrophysiology vol. 34, (5) 1164-1174*. Wiley.

**Quantifying the impact of shape uncertainty on predicted arrhythmias.**

Corrado C, Roney CH, Razeghi O, Lemus JAS, Coveney S, Sim I, Williams SE, O'Neill MD, Wilkinson RD, Clayton RH and Niederer SA. *Computers in Biology and Medicine vol. 153, 106528-106528*. Elsevier.

**Effect of Varying Pericardial Boundary Conditions on Whole Heart Function: A Computational Study.**

Ghebryal J, Rodero C, Barrows RK, Strocchi M, Roney CH, Augustin CM, Plank G and Niederer SA. *Functional Imaging and Modeling of The Heart 545-554*. Springer Nature.

## 2022

**Fiber Organization Has Little Effect on Electrical Activation Patterns During Focal Arrhythmias in the Left Atrium.**

He J, Pertsov AM, Cherry EM, Fenton FH, Roney CH, Niederer SA, Zang Z and Mangharam R. *Ieee Transactions On Biomedical Engineering vol. 70, (5) 1611-1621*. Institute of Electrical and Electronics Engineers.

**Calibrating cardiac electrophysiology models using latent Gaussian processes on atrial manifolds.**

Coveney S, Roney CH, Corrado C, Wilkinson RD, Oakley JE, Niederer SA and Clayton RH. *Scientific Reports* vol. 12, (1) 16572-16572. *Nature Research*.

**A personalized real-time virtual model of whole heart electrophysiology.**

Gillette K, Gsell MAF, Strocchi M, Grandits T, Neic A, Manninger M, Scherr D, Roney CH, Prassl AJ, Augustin CM, Vigmond EJ and Plank G. *Frontiers in Physiology* vol. 13, 907190-907190. *Frontiers Media*.

**The inspection paradox: An important consideration in the evaluation of rotor lifetimes in cardiac fibrillation.**

Jenkins EV, Dharmapranid D, Schopp M, Quah JX, Tiver K, Mitchell L, Xiong F, Aguilar M, Pope K, Akar FG, Roney CH, Niederer SA, Nattel S, Nash MP, Clayton RH and Ganesan AN. *Frontiers in Physiology* vol. 13, 920788-920788. *Frontiers Media*.

**Atrial conduction velocity mapping: clinical tools, algorithms and approaches for understanding the arrhythmogenic substrate.**

Coveney S, Cantwell C and Roney C. *Medical & Biological Engineering & Computing* vol. 60, (9) 2463-2478. *Springer Nature*.

**OpenEP-Py and OpenEP-GUI: An interactive platform for the visualisation and analysis of clinical and simulated cardiac electrophysiology data.**

Smith P, Bishop M, Rajan J, Kerfoot E, Sim I, Kotadia I, O hare D, Fitzpatrick N, Grubb NR, Corrado C, Connally A, Roney C, Niederer S, O neill M and Williams SE. *Ep Europace* vol. 24, (Supplement\_1). *Oxford University Press (Oup)*.

**Interpolation of electrophysiology parameters using OpenEP: technology development and clinical application.**

Williams S, Roney C, Connolly A, Smith P, Bishop M, Niederer S, Whitaker J, Corrado C, Kotadia I, O hare D, Fitzpatrick N, Sim I and O neill M. *Ep Europace* vol. 24, (Supplement\_1). *Oxford University Press (Oup)*.

**Atrial tissue characterisation using electroanatomic voltage mapping and cardiac magnetic resonance imaging.**

Sim I, Razeghi O, Solis Lemus J, Mukherjee R, O hare D, O neill L, Kotadia I, Roney C, Wright M, Chiribiri A, Niederer S, O neill M and Williams S. *Ep Europace* vol. 24, (Supplement\_1). *Oxford University Press (Oup)*.

**PO-616-05 THE INSPECTION PARADOX: AN IMPORTANT CONSIDERATION IN THE EVALUATION OF ROTOR LIFETIMES IN CARDIAC FIBRILLATION.**

Jenkins E, Dharmapranid D, Schopp M, Quah J, Tiver K, Xiong F, Aguilar M, Akar FG, Roney CH, Niederer SA, Nattel S, Nash MP, Clayton RH and Ganesan AN. *Heart Rhythm* vol. 19, (5) s112-s112. *Elsevier*.

**PO-664-05 LOCAL AREA STRAINS FROM RETROSPECTIVE GATED COMPUTED TOMOGRAPHY IMAGING TO DETECT ATRIAL FIBRILLATION.**

Sillett C, Razeghi O, Strocchi M, Roney CH, O'Brien H, Ennis D, Haberland U, Rajani R, Rinaldi CA and Niederer SA. *Heart Rhythm* vol. 19, (5) s297-s298. *Elsevier*.

**Detection of focal source and arrhythmogenic substrate from body surface potentials to guide atrial fibrillation ablation.**

Feng Y, Roney CH, Bayer JD, Niederer SA, Hocini M and Vigmond EJ. *Plos Computational Biology* vol. 18, (3). *Public Library of Science (Plos)*.

**Predicting Atrial Fibrillation Recurrence by Combining Population Data and Virtual Cohorts of Patient-Specific Left Atrial Models.**

Roney CH, Sim I, Yu J, Beach M, Mehta A, Solis-Lemus JA, Kotadia I, Whitaker J, Corrado C, Razeghi O, Vigmond E, Narayan SM, O Neill M, Williams SE and Niederer SA. *Circulation Arrhythmia and Electrophysiology* vol. 15, (2). *Wolters Kluwer*.

**Atrial CARdiac Magnetic resonance imaging in patients with embolic stroke of unknown source without documented Atrial Fibrillation (CARM-AF): Study design and clinical protocol.**

Kotadia ID, O Dowling R, Aboagye A, Sim I, O Hare D, Lemus-Solis J-A, Roney CH, Dweck M, Chiribiri A, Plein S, Sztriha L, Scott P, Harrison J, Ramsay D, Birns J, Somerville P, Bhalla A, Niederer S, O Neill M and Williams SE. *Heart Rhythm O2* vol. 3, (2) 196-203. *Elsevier*.

**The Inspection Paradox: An Important Consideration in the Evaluation of Rotor Lifetimes in Cardiac Fibrillation.**

Jenkins E, Dharmapranid D, Schopp M, Quah JX, Tiver K, Mitchell L, Xiong F, Aguilar M, Pope K, Akar F, Roney C, Niederer S, Nattel S, Nash M, Clayton R and Ganesan A. *Heart Lung and Circulation* vol. 31, s133-s134. *Elsevier*.

**Applications of multimodality imaging for left atrial catheter ablation.**

Roney CH, Sillett C, Whitaker J, Lemus JAS, Sim I, Kotadia I, O'Neill M, Williams SE and Niederer SA. *European Heart Journal - Cardiovascular Imaging* vol. 23, (1) 31-41. Oxford University Press (Oup).

**Late Gadolinium Enhancement Cardiovascular Magnetic Resonance Assessment of Substrate for Ventricular Tachycardia With Hemodynamic Compromise.**

Whitaker J, Neji R, Kim S, Connolly A, Aubriot T, Calvo JJ, Karim R, Roney CH, Murfin B, Richardson C, Morgan S, Ismail TF, Harrison J, de Vos J, Alders MCG, Williams SE, Mukherjee R, O'Neill L, Chubb H, Tschaubronn C, Anter E, Camporota L, Niederer S, Roujol S, Bishop MJ, Wright M, Silberbauer J, Razavi R and O'Neill M. *Frontiers in Cardiovascular Medicine* vol. 8,. *Frontiers*.

**Time-Averaged Wavefront Analysis Demonstrates Preferential Pathways of Atrial Fibrillation, Predicting Pulmonary Vein Isolation Acute Response.**

Roney CH, Child N, Porter B, Sim I, Whitaker J, Clayton RH, Laughner JI, Shuros A, Neuzil P, Williams SE, Razavi RS, O'Neill M, Rinaldi CA, Taggart P, Wright M, Gill JS and Niederer SA. *Frontiers in Physiology* vol. 12,. *Frontiers*.

**B-PO02-137 OPEN-SOURCE PLATFORM FOR ANALYSIS OF FIBROSIS BEFORE AND AFTER A PULMONARY VEIN ISOLATION PROCEDURE.**

Solis-Lemus JA, Roney CH, Razeghi O, Sim I, Kotadia I, Mukherjee R, Williams SE, O'Neill M and Niederer SA. *Heart Rhythm* vol. 18, (8). Elsevier.

**B-PO03-022 INTEGRATING ATRIAL CARDIAC MAGNETIC RESONANCE IMAGING AND ELECTROANATOMIC MAPPING DATA USING UNIVERSAL ATRIAL CO-ORDINATES AND OPENEP (AN OPEN-SOURCE FRAMEWORK FOR ELECTROPHYSIOLOGY RESEARCH).**

Williams SE, Roney CH, Sim I, Kotadia I, Solis-Lemus JA, Razeghi O, Corrado C, Wright MJ, Niederer SA and O'Neill MD. *Heart Rhythm* vol. 18, (8). Elsevier.

**B-PO03-096 DIELECTRIC IMAGING ACCURATELY MEASURES REGIONAL CARDIAC CHAMBER WALL THICKNESS - AN IN VIVO STUDY.**

Kotadia I, Williams ISM, Roney CH, Solis-Lemus J, Razeghi O, Daniel C, Clutton SGE, Grant RGL, Proudfoot JNC, Reisner Y, Harks E, Pilmeyer A, Welsh AKS, Whitaker J, Wright MJ, Niederer SA, O'Neill M and Williams SE. *Heart Rhythm* vol. 18, (8) s227-s228. Elsevier.

**B-PO05-007 RAPID AND ROBUST MAPPING OF CLINICAL DATA ON PERSONALIZED VOLUMETRIC ATRIAL GEOMETRIES.**

Ali SY, Millare B, Bradley R, Ali RL, Boyle PM, Salvador M, Fedele M, Aronis KN, Paliwal N, Prakosa A, Roney CH, Vigmond EJ, Niederer SA and Trayanova NA. *Heart Rhythm* vol. 18, (8) s374-s374. Elsevier.

**B-PO05-012 PREDICTING ATRIAL FIBRILLATION RECURRENCE BY COMBINING POPULATION DATA & PATIENT-SPECIFIC MODELING.**

Roney CH, Sim I, Yu J, Beach M, Mehta A, Solis-Lemus J, Kotadia I, Whitaker J, Razeghi O, Vigmond EJ, Narayan SM, O'Neill MD, Williams SE and Niederer SA. *Heart Rhythm* vol. 18, (8) s375-s376. Elsevier.

**Computational modeling identifies embolic stroke of undetermined source patients with potential arrhythmic substrate.**

Bifulco SF, Scott GD, Sarairah S, Birjandian Z, Roney CH, Niederer SA, Mahnkopf C, Kuhnlein P, Mitlacher M, Tirschwell D, Longstreh WT, Akoum N and Boyle PM. *Elife* vol. 10,. Elife.

**OpenEP: A Cross-Platform Electroanatomic Mapping Data Format and Analysis Platform for Electrophysiology Research.**

Williams SE, Roney CH, Connolly A, Sim I, Whitaker J, O'Hare D, Kotadia I, O'Neill L, Corrado C, Bishop M, Niederer SA, Wright M, O'Neill M and Linton NWF. *Frontiers in Physiology* vol. 12,. *Frontiers*.

**Using machine learning to identify local cellular properties that support re-entrant activation in patient-specific models of atrial fibrillation.**

Corrado C, Williams S, Roney C, Plank G, O'Neill M and Niederer S. *Ep Europace* vol. 23, (Suppl 1). Oxford University Press (Oup).

**Anisotropic cardiac conduction.**

Kotadia I, Whitaker J, Roney C, Niederer S, O'Neill M, Bishop M and Wright M. *Arrhythmia and Electrophysiology Review* vol. 9,.

**Fully Automatic Atrial Fibrosis Assessment Using a Multilabel Convolutional Neural Network.**

Razeghi O, Sim I, Roney CH, Karim R, Chubb H, Whitaker J, O Neill L, Mukherjee R, Wright M, O Neill M, Williams SE and Niederer S. *Circulation: Cardiovascular Imaging* vol. 13, (12) e011512-e011512. American Heart Association.

**Clinical translation of patient-specific organ level cardiac models.**

Costa CM, Roney C, Strocchi M, Razeghi O and Niederer S. *Modeling and Simulating Cardiac Electrical Activity*. Iop Publishing.

**Abstract 14899: Personalized Computational Modeling Identifies Embolic Stroke of Undetermined Source Patients With Potential Arrhythmic Substrate.**

Bifulco S, Scott GD, Sarairah S, Birjandian Z, Roney C, Niederer SA, Mahnkopf C, Kuhnlein P, Mitlacher M, Tirschwell D, Akoum NW and Boyle PM. *Circulation* vol. 142, (Suppl\_3). Wolters Kluwer.

**Left atrial enhancement correlates with myocardial conduction velocity in patients with persistent atrial fibrillation.**

Ali RL, Qureshi NA, Liverani S, Roney CH, Kim S, Lim PB, Tweedy JH, Cantwell CD and Peters NS. *Frontiers in Physiology*. Frontiers Media.

**CemrgApp: An interactive medical imaging application with image processing, computer vision, and machine learning toolkits for cardiovascular research.**

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**P920Understanding arrhythmia mechanisms in patients with atrial septal defects.**

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**Constructing a Human Atrial Fibre Atlas.**

Roney CH, Bendikas R, Pashakhanloo F, Corrado C, Vigmond EJ, McVeigh ER, Trayanova NA and Niederer SA. *Annals of Biomedical Engineering* vol. 49, (1) 233-250. Springer Nature.

**An audit of uncertainty in multi-scale cardiac electrophysiology models.**

Clayton RH, Aboelkassem Y, Cantwell CD, Corrado C, Delhaas T, Huberts W, Lei CL, Ni H, Panfilov AV, Roney C and dos Santos RW. *Philosophical Transactions of The Royal Society a Mathematical Physical and Engineering Sciences* vol. 378, (2173). The Royal Society.

**Creation and application of virtual patient cohorts of heart models.**

Niederer SA, Aboelkassem Y, Cantwell CD, Corrado C, Coveney S, Cherry EM, Delhaas T, Fenton FH, Panfilov AV, Pathmanathan P, Plank G, Riabiz M, Roney CH, dos Santos RW and Wang L. *Philosophical Transactions of The Royal Society a Mathematical Physical and Engineering Sciences* vol. 378, (2173). The Royal Society.

**Gaussian process manifold interpolation for probabilistic atrial activation maps and uncertain conduction velocity.**

Coveney S, Corrado C, Roney CH, OHare D, Williams SE, ONeill MD, Niederer SA, Clayton RH, Oakley JE and Wilkinson RD. *Philosophical Transactions of The Royal Society a Mathematical Physical and Engineering Sciences* vol. 378, (2173). The Royal Society.

**Ventricular fibrillation mechanism and global fibrillatory organization are determined by gap junction coupling and fibrosis pattern.**

Handa BS, Li X, Baxan N, Roney CH, Shchendrygina A, Mansfield CA, Jabbour RJ, Pitcher DS, Chowdhury RA, Peters NS and Ng FS. *Cardiovascular Research* vol. 117, (4) 1078-1090. Oxford University Press (Oup).

**Challenges Associated with Interpreting Mechanisms of AF.**

Roney CH, Wit AL and Peters NS. *Arrhythmia & Electrophysiology Review* vol. 8, (4) 273-284. Radcliffe Cardiology.

**In silico Comparison of Left Atrial Ablation Techniques That Target the Anatomical, Structural, and Electrical Substrates of Atrial Fibrillation.**

Roney CH, Beach ML, Mehta AM, Sim I, Corrado C, Bendikas R, Solis-Lemus JA, Razeghi O, Whitaker J, O Neill L, Plank G, Vigmond E, Williams SE, O Neill MD and Niederer SA. *Frontiers in Physiology* vol. 11,

**Probabilistic Interpolation of Uncertain Local Activation Times on Human Atrial Manifolds.**

Coveney S, Clayton RH, Corrado C, Roney CH, Wilkinson RD, Oakley JE, Lindgren F, Williams SE, O Neill MD and Niederer SA. *Ieee Transactions On Biomedical Engineering* vol. 67.,

**Quantifying atrial anatomy uncertainty from clinical data and its impact on electro-physiology simulation predictions.**

Corrado C, Razeghi O, Roney C, Coveney S, Williams S, Sim I, O Neill M, Wilkinson R, Oakley J, Clayton RH and Niederer S. *Medical Image Analysis* vol. 61.,

**Simulating ventricular systolic motion in a four-chamber heart model with spatially varying robin boundary conditions to model the effect of the pericardium.**

Strocchi M, Gsell MAF, Augustin CM, Razeghi O, Roney CH, Prassl AJ, Vigmond EJ, Behar JM, Gould JS, Rinaldi CA, Bishop MJ, Plank G and Niederer SA. *Journal of Biomechanics* vol. 101.,

**Using cardiac ionic cell models to interpret clinical data.**

Corrado C, Avezzù A, Lee AWC, Mendoca Costa C, Roney CH, Strocchi M, Bishop M and Niederer SA. *Wiley Interdisciplinary Reviews: Systems Biology and Medicine*.

## 2019

**Standardised Framework for Quantitative Analysis of Fibrillation Dynamics.**

Li X, Roney CH, Handa BS, Chowdhury RA, Niederer SA, Peters NS and Ng FS. *Scientific Reports* vol. 9, (1). Springer Nature.

**4969 Enhanced gap junction coupling organised and terminated acute ventricular fibrillation in ex-vivo perfused hearts.**

Handa BS, Li X, Roney C, Pitcher D, Chowdhury RA, Peter NS and Ng FS. *European Heart Journal* vol. 40, (Supplement\_1). Oxford University Press (Oup).

**Fundamentals of cardiac mapping.**

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**A technique for measuring anisotropy in atrial conduction to estimate conduction velocity and atrial fibre direction.**

Roney CH, Whitaker J, Sim I, O Neill L, Mukherjee RK, Razeghi O, Vigmond EJ, Wright M, O Neill MD, Williams SE and Niederer SA. *Computers in Biology and Medicine* vol. 104.,

**Preventing recurrence through analysing recurrence.**

Roney CH and Bishop MJ. *Journal of Cardiovascular Electrophysiology* vol. 30.,

**Acetylcholine Delays Atrial Activation to Facilitate Atrial Fibrillation.**

Bayer JD, Boukens BJ, Krul SPJ, Roney CH, Driessens AHG, Berger WR, van den Berg NWE, Verkerk AO, Vigmond EJ, Coronel R and de Groot JR. *Frontiers in Physiology* vol. 10.,

**Cardiac propagation pattern mapping with vector field for helping tachyarrhythmias diagnosis with clinical tridimensional electro-anatomical mapping tools.**

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**Left atrial effective conducting size predicts atrial fibrillation vulnerability in persistent but not paroxysmal atrial fibrillation.**

Williams SE, O Neill L, Roney CH, Julia J, Metzner A, Reißmann B, Mukherjee RK, Sim I, Whitaker J, Wright M, Niederer S, Sohns C and O Neill M. *Journal of Cardiovascular Electrophysiology*.

**Reproducibility of Atrial Fibrosis Assessment Using CMR Imaging and an Open Source Platform.**

Sim I, Razeghi O, Karim R, Chubb H, Whitaker J, O Neill L, Mukherjee RK, Roney CH, Razavi R, Wright M, O Neill M, Niederer S and Williams SE. *Jacc: Cardiovascular Imaging* vol. 12.,

**Universal atrial coordinates applied to visualisation, registration and construction of patient specific meshes.**

Roney CH, Pashaei A, Meo M, Dubois R, Boyle PM, Trayanova NA, Cochet H, Niederer SA and Vigmond EJ. *Medical Image Analysis* vol. 55.,

## 2018

### **Analytical approaches for myocardial fibrillation signals.**

Handa BS, Roney CH, Houston C, Qureshi NA, Li X, Pitcher DS, Chowdhury RA, Lim PB, Dupont E, Niederer SA, Cantwell CD, Peters NS and Ng FS. *Computers in Biology and Medicine* vol. 102.,

### **Characterisation of re-entrant circuit (or rotational activity) in vitro using the HL1-6 myocyte cell line.**

Houston C, Tzortzis KN, Roney C, Saglietto A, Pitcher DS, Cantwell CD, Chowdhury RA, Ng FS, Peters NS and Dupont E. *Journal of Molecular and Cellular Cardiology* vol. 119.,

### **Determinants of new wavefront locations in cholinergic atrial fibrillation.**

Roney CH, Ng FS, Debney MT, Eichhorn C, Nachiappan A, Chowdhury RA, Qureshi NA, Cantwell CD, Tweedy JH, Niederer SA, Peters NS and Vigmond EJ. *Europace* vol. 20.,

### **Patient-specific simulations predict efficacy of ablation of interatrial connections for treatment of persistent atrial fibrillation.**

Roney CH, Williams SE, Cochet H, Mukherjee RK, O Neill L, Sim I, Whitaker J, Razeghi O, Klein GJ, Vigmond EJ, O Neill M and Niederer SA. *Europace* vol. 20.,

### **Repolarization abnormalities unmasked with exercise in sudden cardiac death survivors with structurally normal hearts.**

Leong KMW, Ng FS, Roney C, Cantwell C, Shun-Shin MJ, Linton NWF, Whinnett ZI, Lefroy DC, Davies DW, Harding SE, Lim PB, Francis D, Peters NS, Varnava AM and Kanagaratnam P. *Journal of Cardiovascular Electrophysiology* vol. 29.,

### **Unraveling the Underlying Arrhythmia Mechanism in Persistent Atrial Fibrillation: Results from the STARLIGHT Study.**

Child N, Clayton RH, Roney CH, Laughner JI, Shuros A, Neuzil P, Petru J, Jackson T, Porter B, Bostock J, Niederer SA, Razavi RS, Rinaldi CA, Taggart P, Wright MJ and Gill J. *Circulation: Arrhythmia and Electrophysiology* vol. 11.,

### **Variability in pulmonary vein electrophysiology and fibrosis determines arrhythmia susceptibility and dynamics.**

Roney CH, Bayer JD, Cochet H, Meo M, Dubois R, Jaïs P and Vigmond EJ. *Plos Computational Biology* vol. 14.,

### **Wavelength and fibrosis affect phase singularity locations during atrial fibrillation.**

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