

Elections to Council Nucleus and Nominating committee 2024-2026

Motivation letter: Why are you interested in joining the Council Nucleus or Nominating committee (250 words max)?

I believe passionately that Medicine is Science. For Cardiology, the ESC Council in Basic Cardiovascular Science is the most prestigious group that promotes this concept. Many years ago, being a young cardiologist from Italy, I had no concept of basic science, but my academic life was changed forever by an ESC Fellowship that allowed me to do a PhD in basic electrophysiology in London. I am still working in this field, and I have never regretted it. I feel that my work can make a difference for clinical practice and ultimately for patients as much as, if not more than, clinical research. Having directed the intercalated BSc course in Cardiovascular Science at Imperial College for several years, I know how passionate and fulfilled medical students can be when they are exposed to basic science in Cardiology, despite a massive pressure to quickly finish their studies. I equally believe that basic scientists should always look for translational aspects of their work; this has led to many essential discoveries that are applied in Cardiology today.

With more than a quarter century experience in basic cardiovascular research performed in a clinical environment, more than 30 PhD students (many were clinicians or medical students), I feel I can contribute positively to the Council.

Finally, in the last decade, I have become disabled (I am on a wheelchair) and I am not able to perform much practical work in the lab; it would be a constructive challenge for me to be part of the Council and offer my experience and my advice not only to my research group and students, but also to the wider membership of ESC cardiovascular basic scientists.

CESARE M.N. TERRACCIANO

CURRICULUM VITAE

web: <https://www.imperial.ac.uk/people/c.terracciano>

Featured in: Circulation- European Prospectives: Cesare M. Terracciano, MD, PhD (2010) **Circulation**; 121:f139-f144.

Summary of Qualifications

- 1989 M.D.**, "110/110 cum laude", School of Medicine and Surgery, I University of Roma 'La Sapienza', Roma.
- 1993 Postdoctoral Diploma in Cardiology**, "70/70 cum laude", II Department of Cardiology, I University of Roma 'La Sapienza', Roma.
- 1995 Ph.D.**, Imperial College of Science, Technology and Medicine, School of Medicine, National Heart & Lung Institute, London. Thesis: "The effects of acidosis on the cardiac sodium/calcium exchanger". Supervisor: Dr Kenneth T MacLeod

Education and Professional experience

- 1983-1989 School of Medicine and Surgery, I University of Roma "La Sapienza".
- 1986-1993 Department of Cardiology, II School of Cardiology, Cardiac Surgery Institute, I University of Roma "La Sapienza".
- 1990-1992 Italian Navy Medical Officer (Liutenant), at Marinferm Navy Hospital, Department of Cardiology, Roma, and on the frigate warship *Libeccio*
- 1992- 1995 Ph.D. student at National Heart & Lung Institute, Dept of Cardiac Medicine, University of London
- 1992-2005 General Medical Council registration
- 1995 –1998 R.A. 1, Division of Cardiac Medicine, Imperial College School of Medicine at National Heart & Lung Institute, London.
- 1998–1999 R. A. 2, Division of Cardiac Medicine, Imperial College School of Medicine at National Heart & Lung Institute, London.
- 1999-2002 Research Lecturer, Division of Cardiac Medicine, Imperial College School of Medicine at National Heart & Lung Institute, London.
- 2002-2009 Senior Lecturer, Head of the Laboratory of Cell Electrophysiology, Heart Science Centre, National Heart & Lung Institute, Faculty of Medicine, Imperial College London.
- 2009- 2014 Reader in Cardiac Electrophysiology, Head of the Laboratory of Cell Electrophysiology, National Heart & Lung Institute, Faculty of Medicine, Imperial College London
- 2014 – present ***Professor of Cardiac Electrophysiology, Head of the Laboratory of Cell Electrophysiology, National Heart & Lung Institute, Faculty of Medicine, Imperial College London***

Source of Funding: HEFCE, Nov 07 to retirement.

Fellowships and Awards

Imperial College Best Research Team Award 2017
Imperial College Teaching Excellence Award 2016
Fellowship of the European Society of Cardiology (2018-todate)
Fellowship of the Royal Society of Biology (2011 – todote)
Research Fellowship of the European Society of Cardiology, 1992
British Heart Foundation Junior Research Fellowship, 1995-1996
British Heart Foundation Intermediate Research Fellowship, 1998-2001
Wellcome Trust Basic Science Career Development Fellowship, 1998-2002
Cardiovascular Research Editorial Board (2017-todate)
Cardiovascular Therapeutics Associate Editor (2012-todate)

Memberships

Biophysical Society (1993-present)
The Physiological Society (1994- present)
American Heart Association (1998- present)
European Working Group of Cardiac Cellular Electrophysiology (1998-present)
International Society of Heart Research (2005-present)
British Society of Cardiovascular Research (2006-present)

Others:

Member of the Executive Committee, Imperial Muscle Institute (2006-2009)
Coordinator of the Imperial College London Cardiac Electrophysiology Working Group (2008)
The Physiological Society Representative for Imperial College London (2011- 2020)

Reviewer and Editorial work

Associated Editor for Cardiovascular Therapeutics
Reviewer for Circulation, the Lancet, Circulation Research, Journal of Clinical Investigation, Journal of Physiology, American Journal of Physiology, Journal of the American College of Cardiology, Cardiovascular Research , Cell Calcium, Journal of Molecular and Cellular Cardiology, British Journal of Pharmacology and others.
Reviewer for funding applications to the European Community, Medical Research Council, British Heart Foundation, the Wellcome Trust, the NHLI foundation.
Reviewer for the American Institute of Biological Sciences for the NYSTEM grant applications (IDEA and Research projects).

Editor of the textbook: *Heart of the Matter: Principles of cardiovascular science*; Springer Nature 2019

Grants awarded

BHF PG/23/11464 "Examining the mechanisms behind cardiomyocyte integration in the heart" (2023-2026) (£347,217)

BHF PG/22/11178 "Mechanosensitive regulation of myocardial contractility and electrophysiology by microvascular endothelial cells (2023-2026) (£298,931)

Petplan Charitable Trust 3-year PhD Studentship "Fibrosis: the forgotten villain in feline hypertrophic cardiomyopathy" (PI David Connelly, Royal Veterinary College) (£2022-2025)

BHF PG/22/10899 "Cardiac electrophysiological mechanisms associated with anti-malarial therapy and its implications for arrhythmogenesis and drug repurposing – COMPARE) (PI K. Jeevaratnam, University of Surrey (2022-2025)(£252,075)

BHF FS/PhD/21/29099 "How do changes in cardiac biomechanical load during development and growth affect the cardiomyocyte phenotype? A study using engineered heart tissue" (2021-2024) (£135,000)

NC3Rs project grant 2019-2022 "Myocardial slices to study cardiovascular disease in vitro"(£461,000)

ICTEM BHF PhD studentship " Regulation of myocardial contractility mediated by extracellular vesicles and studied using ultrathin myocardial slices" 2019-2023 (with Costanza Emanuelli)

BHF Project Grant "Mechanosensitive molecular mechanisms of myocardial fibrosis: a multicellular approach" 2018-2019 (£148,000)

BHF MBPhD Studentship" The development of a novel multicellular 3D myocardial platform for pharmacological and regenerative studies"2018-2021 (£121,000)

British Heart Foundation Research Excellence Award Pilot Grant " Scaffold constructed from extracellular-derived components targeting cardiac applications" 2017-2019 (£50,000) (PI Molly Stevens).

BHF MBPhD Studentship "Regulation of cardiac excitation-contraction coupling by human cardiac fibroblasts in health and disease". 2016- 2019 (£125,000)

ICTEM BHF PhD studentship " Cross talk between endothelial cells (ECs) and cardiac myocytes in the regulation of cardiac contractility" 2016-2020 (with Anna Randi)

BHF Clinical Research Fellowship "Mechanisms of arrhythmia generation from implanted stem cell-derived cardiomyocytes in infarcted hearts". 2016-2019 (£216,000)(PI Sian Harding)

ICTEM BHF PhD studentship "Investigation of the relationship between protein kinase C ϵ and transcriptional co-regulator RIP140 in endothelial and cardiomyocyte function and cross-talk during inflammation" 2015-2019 (with Justin Mason)

British Heart Foundation Research Excellence Award Pilot Grant " Scaffold constructed from extracellular-derived components targeting cardiac applications" 2017-2019 (£50,000) (PI Molly Stevens).

BHF MBPhD Studentship "MicroRNA modulation of β 2-adrenoceptor signalling in Takotsubo Syndrome". 2016-2018 (£91,000) (PI Sian Harding)

BHF MBPhD Studentship FS/15/35/31529 "Training strategies for the development and maintenance of mature structural and electromechanical properties of cardiac muscle patches in vitro". 2015- 2018 (£120,000)

British Heart Foundation Research Excellence Award Pilot Grant "Setting up of a bioreactor for training of cardiac tissue in vitro" 2015 (£50,000).

British Heart Foundation Programme Grant RG/15/1/31165 "Dormant stem cells from adult myocardium (renewal)" (£1M) PI Michael Schneider.

British Heart Foundation PG/14/23/30723 "Mechanosensitivity of the failing myocardium: role of mechanical unloading" 2014-2017 (£260,617).

NC3Rs "Crack-it Challenge Phase 1; Monitoring contractility of bio-realistic human cardiac tissue in vitro" 2014 (£100,000).

Medical Research Council "Mechanosensitive regulation of cardiac excitation-contraction coupling: The role of localized beta-adrenergic receptors and calcium channels" 2014- 2017 (£462,561) with Dr Julia Gorelik

British Heart Foundation FS/13/46/30282 "Control of cardiac myocyte electrical and contractile properties by cardiac fibroblasts via soluble mediators" 2013-2016 MBPhD studentship to Christopher Kane (£118,225)

Wellcome Trust ISSF Networks of Excellence Awards " : Network of Excellence for the Thermal Micro-Stimulation of Excitable Cells" 2014-2015 (£100,000) with Timothy Constantinou.

ICTEM BHF PhD studentship "Generation and electro-architectural characterisation of mature cardiac tissue in vitro" 2013-2017.

Medical Research Council "The molecular function of the Popeye domain containing genes in the heart" 2012-2015 (£1,004,000) with Professor Thomas Brand.

British Heart Foundation " Regeneration of the mammalian heart with cell and gene therapy" 2011-2014 (£225, 890) with Professor Rosenthal and Dr Lara-Pezzi

Imperial College Junior Research Fellowship to Dr Patrizia Camelliti "Heart tissue slices as a new in vitro tool for the study of remodelling in heart failure and reverse remodelling from mechanical unloading" 2010-2013.

Wellcome Trust Foundation "The Electrophysiology of Induced Pluripotent Stem Cells. 2009-2012 (£200,000) with Mr Thanos Athanasiou and Dr Nadire Ali

Magdi Yacoub Institute "Biochemical characterisation of heart failure and recovery" 2010-2011 Studentship to Samha Al Ayoubi

Magdi Yacoub Institute "Myocardial stem cell research and the role of the extracellular matrix in cardiac physiology and disease" 2010-2013 (£300,342).

British Heart Foundation “How does prolonged mechanical unloading affect calcium-induced calcium release in cardiomyocytes? 2009-2012 MBPhD studentship to Michael Ibrahim, (£101,059)

Magdi Yacoub Institute “Beta 2 adrenoreceptor regulation in heart failure” 2009-2011 studentship to Ms Sara Abou Al-Saud (£ 40,000)

Stem Cells for Safer Medicine “Embryonic stem cell derived cardiomyocytes as a toxicology mode - SC4SM” 2009-2010, (£80,000) with Prof Sian Harding and Dr Nadire Ali.

British Heart Foundation “Insulin like-growth 1 and serum glucocorticoid kinases: in concert for cardiac protection and repair” 2008-2010 (£ 281,250) with Prof Rosenthal and Dr Santini.

Magdi Yacoub Institute “Assessment of the beta2-adrenoceptor signalling pathway” 2008-2009 (£36,260).

Magdi Yacoub Institute “Effects of pharmacological therapy on myocardial atrophy induced by mechanical unloading” 2008-2010 (£154,254).

British Heart Foundation Project Grant “Regulation of Na⁺/Ca²⁺-exchanger activity by the β₂-adrenoceptor in normal and failing heart 2007-2009 (£ 130,781) with Prof Sian Harding.

British Heart Foundation Project Grant "Cellular, molecular and functional effects of unloading in normal and diseased hearts" 2005-2008 (£ 197,253) with Prof Magdi Yacoub.

Wellcome Trust Research Grant, “Cell transplantation to the failing heart: functional studies on excitation-contraction and cell-to-cell coupling”, 2003-2006 (£ 389,135)

Harefield Research Foundation, (HSC 66/03) “ Cell transplantation to the failing heart” 2003-2006 (£39,877)

Harefield Research Foundation, (HSC 67/03) “ Cell electrophysiology” 2003-2006 (£88,656)

Harefield Research Foundation, (HSC 49/03) “Mechanisms of excitation-contraction coupling in cardiac and skeletal muscle” 2003-2005 (£53,946 & £59,117) with Dr Ken Suzuki

Magdi Yacoub Institute (HSC 52/03) “ Cell transplantation electrophysiological studies” 2004-2005 (£38,830)

Wellcome Trust Research Grant, “Effects of the overexpression of the Na⁺/Ca²⁺ exchanger in cardiac hypertrophy”, 1999-2002 (£ 295,722)

British Heart Foundation Project Grant PG/2001097, “Functional effects of Na⁺/Ca²⁺ exchanger overexpression in adult cardiomyocytes”, 2001-2003 (£ 34,762)

Wellcome Trust Basic Science Career Development Fellowship, "Expression and function of the Na⁺/K⁺ pump in cardiac hypertrophy", 1998-2002, (£ 375,002)

British Heart Foundation Junior Research Fellowship “Intracellular calcium homeostasis during cardiac ischaemia: effects of potassium and lactate”, 1994-1996, (£70,742)

British Heart Foundation Research Grant, "Alterations to gene expression in the heart: consequences for contraction and relaxation", 1996- 1998, (£101, 965)

Research Fellowship of the European Society of Cardiology, “Ionic regulation during hypoxia and ischaemia in isolated cardiac myocytes” 1992, (SF 50,000)

Grants/ others:

Core Member of the BHF Centre for Regenerative Medicine, Imperial College London, 2013-2017 (£ 2.5 million).

Member of the BHF Centre of Research Excellence at Imperial College London, 2014-2018 (£ 3 million).

Member of the BHF Centre of Research Excellence at Imperial College London, 2008-2014 (£ 8.9 million).

Fondation Leducq, Associate member, Transatlantic Network Grant 2005-2010 Calcium Cycling and Novel Therapeutic Approaches for Heart Failure. Anne-Marie Lompre (INSERM Paris) and Andrew Marks (Columbia).

Fondation Leducq, Associate member, Transatlantic Network Grant 2011-2016 Translating human pluripotent stem cells from heart disease models to cardiac repair. Michel Puceat (INSERM Paris) and Andre Terzic (Mayo Clinic, Rochester).

Teaching

Undergraduate

Faculty of Medicine, Imperial College London

Director of the BSc course in Cardiovascular Sciences – 2013 -2020

Organiser of Module 1 with Professor Ralph Knoell and Professor Steve Marsten.

Chair of the examiners’ board for the BSc course in Cardiovascular Sciences – 2008 – 2015

Member of the teaching committee for the BSc course in Cardiovascular Sciences 2013-2020

Lecturer for the BSc course in Cardiovascular Sciences (2013-2020) with lectures on:

- Electrophysiological techniques
- Ion transporters
- E-C coupling
- Ion channel dysfunction in heart failure

Lecturer for the BSc in Biomedical Science on (2013-2020):

- The electrical activity of the heart
- The mechanical activity of the heart

Lecturer for the BSc in Surgery and Anaesthesia (2013-2020) on

- E-C coupling in heart failure

Lecturer for the BHF MRes course (2013-2020)

- Cardiac excitation-contraction coupling and cellular mechanisms of arrhythmias

Lecturer at the “Electroanatomy relevant to Electrophysiology” course organised by the Royal Society of Medicine (2018-2019):

- Basic principles in cardiac electrophysiology

Supervisor of laboratory projects for BSc in Cardiovascular Sciences (>50 students)

Nominated in 2014, 2015, 2016 Student Academic Choice Awards in the Best Tutoring category

Postgraduate

PhD supervisor of Aalya Malik, registered in 2002 (study leave between 2005 to-2008), awarded Dec 2009. Title of the project: “The Effects Of Na/K Pump Overexpression On Myocardial Function”.

PhD supervisor of Joon Lee, registered 2004, awarded July 2008. Title of project: “The Effects of Adult Progenitor Cell Transplantation on Recipient Cardiomyocyte Excitation-Contraction Coupling”. *Winner of the ESC 2006 travel award and NHLI retreat prize 2007.*

PhD supervisor of Gopal K Soppa, registered 2004, awarded July 2009. Title of project: “The Effects Of Mechanical Unloading And β_2 AR Stimulation In Heart Failure”. *Winner of the AHA 2006 poster competition.*

PhD supervisor of Manoraj Navaratnarajah, registered 2008, awarded January 2013. Title of project “Combination therapy for the treatment of heart failure”.

PhD supervisor of Michael Ibrahim, registered 2009, awarded August 2012. Title of project “Role of the transverse tubule in heart failure and mechanical unloading”. *Winner of the NHLI Best Thesis award 2013.*

PhD supervisor of James Cartledge, registered 2010. Awarded August 2013. Title of the project “Electrophysiological characterisation of cardiac fibroblasts”.

PhD supervisor of Christopher Rao, registered 2010. Awarded Feb 2014. Title of the project “Electrophysiological characterisation of cardiomyocytes-derived from IPS cells.

PhD Supervisor of Samha Al Ayoubi, registered 2010, awarded 2017. Title of project: “Biochemical characterisation of heart failure and recovery”.

PhD Supervisor of Matt Tranter, registered 2012. Title of project:”Takatsubo cardiomyopathy”.

PhD Supervisor of Christopher Kane, registered 2013. Title of project:” Control of cardiac myocyte electrical and contractile properties by cardiac fibroblasts via soluble mediators”.

PhD Supervisor of Tatiana Trantidou, registered 2011, awarded 2014. Title of project: “Biorealistic platforms for cell culture”.

PhD Supervisor of Eleanor Humphrey registered 2014, awarded 2018. Title of project:” Generation and electro-architectural characterisation of mature cardiac tissue in vitro”.

PhD Supervisor of Sean Bello registered 2014, awarded 2018. Title of project:”Role of mechanical load in the regulation of myocardial structure and function”.

PhD Supervisor of Carolina Pinto-Riccardo registered 2014, awarded 2018. Title of project: ”Mitochondrial DNA mutations and cardiac function”.

PhD Supervisor of Kitanan Warrapong registered 2015, awarded 2019. Title of project: ” Scaffold microarchitecture and cardiac function”.

PhD Supervisor of Samuel Watson registered 2015, awarded 2018. Title of project: "Training strategies for the development and maintenance of mature structural and electromechanical properties of cardiac muscle patches in vitro".

PhD Supervisor of Liam Couch registered 2015, awarded 2018. Title of project: "MicroRNA modulation of β 2-adrenoceptor signalling in Takotsubo Syndrome".

PhD Supervisor of Jerome Fourre' registered 2016, awarded 2020. Title of project: "Investigation of the relationship between protein kinase C ϵ and transcriptional co-regulator RIP140 in endothelial and cardiomyocyte function and cross-talk during inflammation".

PhD Supervisor of Richard Jabbour registered 2016, awarded 2020. Title of project: "Mechanisms of arrhythmia generation from implanted stem cell-derived cardiomyocytes in infarcted hearts".

PhD Supervisor of Ifigeneia Bardi registered 2016, awarded 2020. Title of project: "Role of mitochondria in mechanosensitivity".

PhD Supervisor of Oisin King registered 2017, awarded 2021. Title of project: "Cross talk between endothelial cells (ECs) and cardiac myocytes in the regulation of cardiac contractility".

PhD Supervisor of Fotis Pitoulis registered 2017, awarded 2020. Title of project: "Advanced electromechanical methods to culture adult myocardium in vitro".

PhD Supervisor of Brian Wang, registered 2017, awarded 2021" Regulation of cardiac excitation-contraction coupling by human cardiac fibroblasts in health and disease"

PhD Supervisor of Katya Pchelintseva, registered 2019. "Minimally invasive implantation of cardiac cells via heart-adhesive and injectable shape-memory patches".

PhD Supervisor of Laura Nicastro, registered 2019 "Regulation of myocardial contractility mediated by extracellular vesicles and studied using ultrathin myocardial slices".

PhD Supervisor of Barrett Downing, registered 2021. "How do changes in cardiac biomechanical load during development and growth affect the cardiomyocyte phenotype? A study using engineered heart tissue"

PhD Supervisor of Mary Ball, registered 2022. "Fibrosis: the forgotten villain in feline hypertrophic cardiomyopathy"

PhD Supervisor of Ana Cammack, registered 2022. "Minimally invasive implantation of cardiac cells via heart-adhesive and injectable shape-memory patches"

External examiner: Doctor of Philosophy Degree, University of Bristol, Mary K. Convery, thesis entitled "Aspects of Na/Ca exchanger function in rabbit cardiac ventricular and atrio-ventricular nodal myocytes", Bristol 7th January 2000, supervisor: Prof Jules Hancox.

External examiner: Doctor of Philosophy Degree, University of Glasgow, Christopher Loughrey, thesis entitled "Modulation of spontaneous Ca release from the sarcoplasmic reticulum by FKBP12.6 in rabbit ventricular myocytes", Glasgow, September 2003, supervisor, Professor Godfrey Smith.

Internal Examiner: Doctor of Philosophy Degree, University of London, Surangi Perera, thesis entitled "Developmental programming of MuRF2 isoforms: implications for muscle differentiation, function and disease", London, March 2008, supervisor Professor Mathias Gautel.

External examiner: Doctor of Philosophy Degree, University of Manchester, Leonnie Diffley, thesis entitled "Calcium regulation and ion channel remodelling in an animal model of heart failure", Manchester, May 2008, supervisors Professor David Eisner and Dr Andrew Trafford.

Internal Examiner: Doctor of Philosophy Degree, Imperial College London, Paramdeep Dhillon "Conduction velocity and connexins expression", London, February 2010, supervisors Professor Nicholas Peter and Professor Chris Fry.

Internal Examiner: Doctor of Philosophy Degree, Imperial College London, Siti Sheikh Abdul Kadir "Role of bile acids in foetal arrhythmias during pregnancy", London, February 2010, supervisor Dr Julia Gorelik.

External Examiner: Doctor of Philosophy Degree, King's College London, Andrew Hall "Nitric Oxide induced stimulation of the cardiac Na/K ATPase requires Phospholemman", London, April 2010, supervisor Professor Michael Shattock.

Internal Examiner: Doctor of Philosophy Degree, Imperial College London, Pryanthi Dias "Role of connexin expression in cardiac cell lines", London, Feb 2011, supervisor Dr Kenneth T MacLeod.

External Examiner: Master By Research Degree, University of Hull, Amy Dawson "The regenerative properties of the heart", Hull January 2011, supervisor Dr Sandra Jones.

External Examiner: Master By Research Degree, University of Kent, Sarah Birch "Protein 4.1 and NaV1.5 in cell lines", Canterbury July 2011, supervisor Dr Anthony Baines.

External Examiner: Doctor of Philosophy Degree, University of Bristol, Elisa Venturi "Ion transporters in the sarcoplasmic reticulum", Bristol, October 2011, Supervisor Professor Rebecca Sitsapesan

Internal Examiner: Doctor of Philosophy Degree, Imperial College London, Fu Siong Ng "The effects of gap junction modulation on myocardial structure and function". London Nove 2011, Supervisor Professor Nick Peters.

Internal Examiner: Doctor of Philosophy Degree, Imperial College London, James Ware "Genomic dissection of arrhythmia and cardiac electromechanics" London September 2012 Supervisor Professor Stuart Cook.

External Examiner Doctor of Philosophy Degree, King's College London "The role of esmolol for cardioprotection" Dec 2012 Supervisor Dr David Chambers.

Internal Examiner Doctor of Philosophy Degree, Imperial College London, Andreas Kyriacou "Resynchronisation therapy in heart failure" Jan 2014, Supervisor Prof Darryl Francis.

External Examiner Doctor of Philosophy Degree, University of Glasgow, Douglas McCarroll "The effects of Trypanosoma Brucei and mammalian-derived extracellular cathepsin-L on myocardial function" Apr 2014 Supervisor Dr Chris Loughrey.

Internal Examiner Doctor of Philosophy Degree, Imperial College London, Napachanok Mongkoldhumrongkul "Endothelial regulation of extracellular matrix in the aortic valve" May 2014, Supervisor Dr Adrian Chester.

Internal Examiner Doctor of Philosophy Degree, Imperial College London, Markus Sikkell "Arrhythmogenic sarcoplasmic reticulum calcium leak in isolated ventricular cardiomyocytes" Jan 2015, Supervisor Dr Ken MacLeod.

Internal Examiner Doctor of Philosophy Degree, Imperial College London, Sarah Alsobaie "Characterisation of encapsulated embryonic stem cells using SILAC-based proteomics" Mar 2015, Supervisor Prof Tony Cass.

I have acted as PhD NHLI and Supervisor Assessor for more than 20 NHLI students.

Publications

NUNEZ_TOLDRA R, DEL CANIZO A, SECCO I, NICASTRO L, GIACCA M, **TERRACCIANO CM**. Living myocardial slices for the study of nucleic acid-based therapies. **Front Bioeng Biotechnol**. 2023 Oct 24;11:1275945. doi: 10.3389/fbioe.2023.1275945. eCollection 2023.

PITOU LIS FG, SMITH JJ, PAMIAS-LOPEZ B, DE TOMBE PP, HAYMAN D, **TERRACCIANO CM**. MyoLoop: Design, development and validation of a standalone bioreactor for pathophysiological electromechanical in vitro cardiac studies. **Exp Physiol**. 2023 Oct 17. doi: 10.1113/EP091247. Online ahead of print.

ZABIELSKA-KACZOROWSKA MA, BOGUCKA AE, MACUR K, CZAPLEWSKA P, WATSON SA, PERBELLINI F, **TERRACCIANO CM**, SMOLENSKI RT. Label-free quantitative SWATH-MS proteomic analysis of adult myocardial slices in vitro after biomimetic electromechanical stimulation. **Sci Rep**. 2022 Oct 3;12(1):16533.

KING O, CRUZ-MOREIRA D, SAYED A, KERMANI F, KIT-ANAN W, SUNYOVSKI I, WANG BX, DOWNING B, FOURRE J, HACHIM D, RANDI AM, STEVENS MM, RASPONI M, **TERRACCIANO CM**. Functional microvascularization of human myocardium in vitro. **Cell Rep Methods**. 2022 Aug 29;2(9):100280.

WANG BX, KANE C, NICASTRO L, KING O, KIT-ANAN W, DOWNING B, DEIDDA G, COUCH LS, PINALI C, MITRAKI A, MACLEOD KT, **TERRACCIANO CM**. Integrins Increase Sarcoplasmic Reticulum Activity for Excitation-Contraction Coupling in Human Stem Cell-Derived Cardiomyocytes. **Int J Mol Sci**. 2022 Sep 19;23(18):10940.

HACHIM D, ZHAO J, BHANKHARIA J, NUÑEZ-TOLDRA R, BRITO L, SEONG H, BECCE M, OUYANG L, GRIGSBY CL, HIGGINS SG, **TERRACCIANO CM**, STEVENS MM. Polysaccharide-Polyplex Nanofilm Coatings Enhance Nanoneedle-Based Gene Delivery and Transfection Efficiency. **Small**. 2022 Sep;18(36):e2202303.

WANG BX, NICASTRO L, COUCH L, KIT-ANAN W, DOWNING B, MACLEOD KT, **TERRACCIANO CM**. Mechanosensitive molecular mechanisms of myocardial fibrosis in living myocardial slices. **Cells**. 2022 Mar 30;11(7):1171.

NUNEZ-TOLDRA R, KIRWIN T, FERRARO E, PITOU LIS FG, NICASTRO L, BARDI I, KIT-ANAN W, GORELIK J, SIMON AR, **TERRACCIANO CM**. Mechanosensitive molecular mechanisms of myocardial fibrosis in living myocardial slices. **ESC Heart Fail**. 2022 Apr;9(2):1400-1412.

VAN DER VELDEN J, ASSELBERGS FW, BAKKERS J, BATKAI S, BERTRAND L, BEZZINA CR, BOT I, BRUNDEL BJM, CARRIER L, CHAMULEAU S, CICCARELLI M, DAWSON D, DAVIDSON SM, DENDORFER A, DUNCKER DJ, ESCHENHAGEN T, FABRITZ L, FALCÃO-PIRES I, FERDINANDY P, GIACCA M, GIRAO H, GOLLMANN-TEPEKÖYLÜ C, GYONGYOSI M, GUZIK TJ, HAMDANI N, HEYMANS S, HILFIKER A, HILFIKER-KLEINER D, HOEKSTRA AG, HULOT JS, KUSTER DWD, VAN LAAKE LW, LECOUR S, LEINER T, LINKE WA, LUMENS J, LUTGENS E, MADONNA R, MAEGDEFESSEL L, MAYR M, VAN DER MEER P,

PASSIER R, PERBELLINI F, PERRINO C, PESCE M, PRIORI S, REMME CA, ROSENHAHN B, SCHOTTEN U, SCHULZ R, SIPIDO KR, SLUIJTER JPG, VAN STEENBEEK F, STEFFENS S, **TERRACCIANO CM**, TOCCHETTI CG, VLASMAN P, YEUNG KK, ZACCHIGNA S, ZWAAGMAN D, THUM T. Animal models and animal-free innovations for cardiovascular research: current status and routes to be explored. Consensus document of the ESC Working Group on Myocardial Function and the ESC Working Group on Cellular Biology of the Heart. **Cardiovasc Res.** 2022 Dec 9;118(15):3016-3051.

JABBOUR RJ, OWEN TJ, PANDEY P, REINSCH M, WANG B, KING O, COUCH LS, PANTOU D, PITCHER DS, CHOWDHURY RA, PITOULIS FG, HANDA BS, KIT-ANAN W, PERBELLINI F, MYLES RC, STUCKEY DJ, DUNNE M, SHANMUGANATHAN M, PETERS NS, NG FS, WEINBERGER F, **TERRACCIANO CM**, SMITH GL, ESCHENHAGEN T, HARDING SE. In vivo grafting of large engineered heart tissue patches for cardiac repair. **JCI Insight.** 2021 Aug 9;6(15):e144068.

BASNETT P, MATHARU RK, TAYLOR CS, ILLANGAKOON U, DAWSON JI, KANCZLER JM, BEHBEHANI M, HUMPHREY E, MAJID Q, LUKASIEWICZ B, NIGMATULLIN R, HESELTINE P, OREFFO ROC, HAYCOCK JW, **TERRACCIANO C**, HARDING SE, EDIRISINGHE M, ROY I. Harnessing Polyhydroxyalkanoates and Pressurized Gyration for Hard and Soft Tissue Engineering. **ACS Appl Mater Interfaces.** 2021 Jul 21;13(28):32624-32639.

COUCH LS, FIEDLER J, CHICK G, CLAYTON R, DRIES E, WIENECKE LM, FU L, FOURRE J, PANDEY P, DERDA AA, WANG BX, JABBOUR R, SHANMUGANATHAN M, WRIGHT P, LYON AR, **TERRACCIANO CM**, THUM T, HARDING SE. Circulating microRNAs predispose to takotsubo syndrome following high-dose adrenaline exposure. **Cardiovasc Res.** 2022 Jun 22;118(7):1758-1770.

DRIES E, BARDI I, NUNEZ-TOLDRA R, MEIJLINK B, **TERRACCIANO CM**. CaMKII inhibition reduces arrhythmogenic Ca²⁺ events in subendocardial cryoinjured rat living myocardial slices. **J Gen Physiol.** 2021 Jun 7;153(6):e202012737.

KING O, SUNYOVSKI I, **TERRACCIANO CM**. Vascularisation of pluripotent stem cell-derived myocardium: biomechanical insights for physiological relevance in cardiac tissue engineering. **Pflugers Arch.** 2021 Jul;473(7):1117-1136.

PITOULIS FG, NUNEZ-TOLDRA R, XIAO K, KIT-ANAN W, MITZKA S, JABBOUR RJ, HARDING SE, PERBELLINI F, THUM T, DE TOMBE PP, **TERRACCIANO CM**. Remodelling of adult cardiac tissue subjected to physiological and pathological mechanical load in vitro. **Cardiovasc Res.** 2022 Feb 21;118(3):814-827.

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