

Utrecht, February 2, 2017

CURRICULUM VITAE

MARC ADRIAAN VOS

Home Address

Prof. dr. Marc A. Vos
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The Netherlands

Office Address

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Marc Vos (male) was born on February 16, 1958 in Tilburg, The Netherlands. He has the Dutch nationality, is married to Rian M.W.M. Vos-Ceelen and they have two sons (Frank, 1989; Martijn 1991) and one daughter (Vivian, 1992).

CURRENT EMPLOYMENT

01-04-2003

Professor and Chair of the Department of Medical Physiology, Division Heart and Lungs, University Medical Center Utrecht, Utrecht, The Netherlands.

01-01-2012

Principal Investigator Molecular and Cellular Laboratories of Circulatory Health

SUBMITTED/PREPARATION

1. J.G.M. Jungschleger, G.P. Thomas, J.M. Di Diego, A. Burashnikov, F.F. van der Hulst, S.C. Verduyn, J.D.M. Beekman, MA Vos, C Antzelevitch. Enhancement of dispersion in repolarization after atrio-ventricular block in the canine heart. Preparation
2. SC Wijers, A Bossu, D Sprenkeler, A Dunnink, HD Beekman, R Varkevisser, A Aranda Hernandez, M Meine, MA Vos. Beat-to-beat variations in activation recovery derived from the RV electrogram can monitor arrhythmic risk under anaesthesia and awake conditions in the CAVB dog. Rejected J Translational Research – submitted Heart Rhythm end of January 2017.
3. SC Wijers, IA ter Horst, K. Vernooy, M. Rienstra, B. Geelhoed, M. Meine, MA Vos. QRS vector amplitude in the transversal plane for quantification of left ward conduction delay in patients eligible for cardiac resynchronization therapy – an objective alternative for left bundle branch block.
4. SKG. Winckels, WA Groenewegen, MFM van Oosterhout, J van Kuik, AH Bruggink, RA de Weger, TA van Veen, V Szuts, A Varro, JH Kirkels, N de Jonge, MA Vos. Variation in QRS duration in end stage heart failure related to differential expression of SCN5A? Preparation
5. SKG Winckels, HJ Schouten, HD Beekman, N Atteveldt, MA Vos. Incomplete reversibility of electrical remodeling in chronic AV-block dogs is unmasked by anesthesia and dofetilide. **Rejected** Cardiovascular Research (19-10-2007) and Heart Rhythm (15-5-2008)
6. SKG Winckels, cisapride
7. M Schoenmakers: carvedilol
8. PESP
9. TR Stams, M Meine, HD Beekman, R van der Nagel, MA Vos. Chronic dyssynchronous ventricular activation is pro-arrhythmic and this is reversible by cardiac resynchronization therapy. **Heart Rhythm YIA** competition, Jan 2014. **POSTER + unmasking ESC**, submitted JACC, rejected.
10. TR Stams, P Oosterhoff, S Winckels, A Oros, R Varkevisser, R van der Nagel, HD Beekman, MA Vos. Novel parameters to improve quantification of arrhythmogenesis and risk of Torsade de Pointes using a dofetilide challenge in anesthetized dogs. Rejected JCE and J Ph Meth and Toxicology.
11. JA Jansen, S de Jong, CA Remme, TAB van Veen, R van der Nagel, R Labzowski, MA Vos, C Bezzina, JMT De Bakker, HVM van Rijen. Progressive AV-block in a mouse-model of Lev / Lenègre disease. **Toekomst**
12. S Soni, E Corradini, M Boulaksil, R van der Nagel, BG Kok, MFA Bierhuizen, JMT de Bakker, HVM van Rijen AJR Heck, A. Scholten, MA Vos, TAB van Veen. Timing of altered anchored cAMP Signaling in a rat model with progression to heart failure. Card Res, rejected; resubmission JMCC, rejected.
13. **Y Ji***, R Varkevisser*, D Opacic*, A Bossu, HDM Beekman, S Yang, M Zhuo Wang, S Verheule, MA Vos, MAG van der Heyden. Inhibition of the inward rectifier current I_{K1} by PA-6 restores sinus rhythm in goats with atrial fibrillation and does not cause ventricular arrhythmias in dogs with chronic AV block. Rejected Circ Res, aug BRC and submitted **Br J Pharmacol**

14. **Y Ji**, H Takanari, L Nalos, MJ Houtman, R Heukers, PM van den Bergen en Henegouwen, MA Vos, MA van der Heyden. Class III anti-arrhythmic drugs amiodarone and dronedarone impair Kir 2.1 backward trafficking. Submitted **JMMC** 2016; Abstract Heart Rhythm 16 – accepted
15. **I Baburin**^{*}, R Varkevisser^{*}, A Schramm^{*}, P Saxena, T Linder, A Stary-Weinzinger, MAG van der Heyden, M Houtman, H Takanari, M Jonsson, HD Beekman, M Hamburger^{*}, MA Vos^{*}, S Hering^{*}. Dehydroevodiamine (DHE), an isoquinazolinecarboline alkaloid from the traditional Chinese herb drug Evodia Rutaecarpa, has pro-arrhythmic effects *in vitro* and *in vivo*. Rejected Circ; Submitted to Circulation Research in Nov 2016
16. AC Blank, L van Stuijvenberg, D van den Brink, EM van der Esch, R de Weger, PK Loh, VM Christoffels, V Szatmari, J Strengers, TA van Veen, MA Vos. Computer three-dimensional reconstruction of the canine atrioventricular conduction axis under physiological and pathological conditions. the normal and diseased.
17. Avram Oros^a, Lotte C. Houtepen^a, M.A. Vos^b, René Kahn^a, Marian Joëls^a, Marco Boks^a, Christiaan Vinkers^a. Autonomic modulation of the heart rate during social stress in euthymic patients with bipolar disorder.
18. A Bossu, R Varkevisser, Jet DM Beekman, M Houtman, A Oros, M Thomsen, G Antoons, T Stams, V Bourgonje, MAG van der Heyden, Marc A Vos. Beat-to-beat variability of repolarization prevails over repolarisation in the evaluation of antiarrhythmic drug interventions in the CAVB dog. Rejected Pharm and Ther, Br J Pharmacol, and JPET
19. Bossu A, MJC Houtman, VMF Meyborg, R Varkevisser, HDM Beekman, A Dunnink, JMT de Bakker, N Mollova, S Rajamani, L Belardinelli, MAG van der Heyden, MA Vos. GS-458967, a Potent Late Sodium Current Inhibitor, Terminates Torsades de Pointes Arrhythmias in the Chronic Atrioventricular Block Dog Model. Circ Res 2017 MAG van der Heyden,.
20. A Dunnink, TRG Stams, R Varkevisser, M Meine, MA Vos. Ventricular electrical remodeling and arrhythmogenesis in compensated cardiac hypertrophy – the role of ventricular activation for the site of TdP origin –. Acta Physiologica 2014, rejected
21. **A Dunnink**, A Bossu, R Varkevisser, S Wijers, A Oros, V Bourgonje, Th Stams, HDM Beekman, M Meine, MA Vos. Acute right ventricular apex pacing does neither modify Torsade de Pointes incidence nor origin in the anaesthetised, remodelled CAVB dog. **JCE** rejected
22. **Sanne de Jong**, Bart Kok, Michelle CA van Wijk, Magda SC Fontes, Maike AD Brans, Jacques MT de Bakker, Marc A Vos, Harold VM van Rijen, Marti FA Bierhuizen. In cardiac pressure overloaded mice, fibrosis is correlated to miR-21, miR30c, miR-133a in tissue but not in plasma. **JCMM**, end october 2015
23. **L Bergau**, R Willems, MA Vos, AE Tuinenburg, P Flevari, A Dunnink, B Vandenberg, SC Wijers, D Katsaras, L Lüthje, J Seegers, S Sossalla, TH Fischer, C Röver, SE Lehnart, G Hasenfuss, T Friede, and M Zabel. Risk stratification of ICD patients for appropriate shock and mortality in a multi-centre cohort. The EU-TrigTreat study. Rejected JACC, EHJ and Heart, june 2016
24. J Seegers, R Willems, S Wijers, A Tuinenburg, P Flevari, P Muñoz Expósito, C Sohns, S Sossalla, L Lüthje, C Röver, T Friede, MA Vos, G Hasenfuß, M Zabel. Results of Noninvasive Risk Assessment and Clinical Characteristics in Patients with Implantable Cardioverter-Defibrillators

25. **Du Pre BC**, Van Laake LW, Meine M, Van der Heijden JF, Doevendans PA, Vos MA, Van Veen TA. Analysis of circadian repolarisation identifies QTc diurnality as a novel clinical parameter associated ventricular arrhythmias in patients with heart failure. Submitted nov 2015
26. **BC du Pre**, TAB van Veen, MA Vos PhD, JC Deddens, PA Doevendans, LW van Laake. Variation within variation: Variability of 24-hour rhythm in infarct size. Rejected Plos One, submitted to J Card Failure oct 2016; rejected J CV Transl Research sept 2016
27. **BC du Pre**, DA van Feyen, EJ Demkes, PJ Dierickx, S Crnko, BJ Kok, JP Sluijter, PA Doevendans, MA Vos, TA van Veen, LW van Laake. Sca1 cells from the heart possess a molecular circadian clock and display circadian oscillations in proliferation, stress tolerance and paracrine factor secretion. Circ Res rejected, Stem Cell Reports Aug 2016.
28. N vanderSickel, A Bossu, J de Neve, A Dunnink, VM Meijborg, MA van der Heyden, J Beekman, JM de Bakker, MA Vos, AV Panfilov.

Both reentry and ectopic activity can be the underlying mechanism of perpetuation of Torsade de Pointes arrhythmias in the CAVB dog, and are dependent on the duration of TdP.

Duration of TdP in the CAVB dog is determined by its mechanism: the longer TdP episodes are organised by reentry, while short lasting episodes by ectopic activity.

29. Sprenkeler DJ, AE Tuinenburg, H Ritsema van Eck, MA Vos. Circadian pattern of STV QT in a primary prevention population: a methodological pilot study of EU-CERT-ICD.
30. IAH ter Horst, SC Wijers, PAF Doevendans, MA Vos, M Meine. Signs of 'reverse' electrical remodeling after initiation of CRT seen in structural responders but not in non-responders to CRT
- 31.
- 32.

CURRENT ACADEMIC FUNCTIONS UTRECHT

ACADEMIA

Scientific Advisor for the “van Wijck – Stam – Caspers (WSC) fonds”, which provides financial assistance for students going abroad for cardiovascular electives (2004-).

Member of the committee “Proefdierdeskundigen-Faculteit Geneeskunde/Grote Dieren” (2010-)

MEDICINE

Lecturer in Forensic Medicine, elective year 2

BIOMEDICAL SCIENCES

Program Leader of the MASTER Traject BIOLOGY of DISEASE in the Division Life Sciences of the Utrecht Graduate School (UGS).

Lecturer in PhD courses BCC and Animal Use

Chair of the PhD program tract Cardiovascular Sciences UMCU

NLHI / NHS

Member of the Scientific Board (Wetenschapsforum NHI) of the Netherlands Heart Institute / Netherlands Heart Foundation (2016-).

PREVIOUS ACADEMIC FUNCTIONS UTRECHT

Chair of the UMCU “Cardiovascular Sciences” (2005-2009)

Member of the “Donders Fonds”, responsible for electing the best PhD thesis in Ophthalmology (2003-2010)

Coordinator 1.5 (2003-2009) and member of the “Bachelor Committee” (2003-2008) and “Opleidingsraad” (2003-2009) of the study Medicine

Participant in the Exams (UVT) Preparation and Evaluation Committee (2003-2010)

Tutor 2.1 (2003-2004); Tutor 2.4 (2004-2005)

Coordinator “Orgaansystemen” BioMedische Wetenschappen (2003-2005)

Member of the COLLOQUIM forum of the Teaching Institute Utrecht (2003-2005).
 Reflection Mentor (2003- 2007)
 Member of the Board of Studies of the Utrecht Graduate School of Life Sciences and chair of the
 “Klinsiche Kamer”
 Co-Chair (Prof Pasterkamp) of the UU Research Theme “Cardiovascular Research” (UCARE)”
 (2007 – 2014).
 Member of the Program Cie of Circulatory Health (2012-2014)
2005-2015 Member of the management team of the Division Heart & Lungs (DH&L): Prof dr MA
 Vos is responsible for Education and Research (O&O) of this division of the UMCU.
2005-2010 Chair of the UMCU Research Theme (1 from 7): “Cardiovascular Sciences”.
2007- 2013 Co-chair of the University Utrecht “Focus and Massa” Theme (1 from 15):
 “Cardiovascular Research (UCARE).
2011- 2015 Member of the Board of the research program Circulatory Health UMCU

PREVIOUS NATIONAL FUNCTIONS

Member of the Scientific Advisory Committee Pathogenesis of the **Netherlands Heart
 Foundation**. (01-01-2001 - 01-01-2009).

EDUCATION/CAREER

1970-1978

VWO-B, Tilburgs Avondcollege, **Tilburg**, The Netherlands (23.06.1978).

1979-1984

Study Exercise Physiology at Interfaculty Physical Education, University of **Amsterdam**,
 The Netherlands. Doctoral Thesis for **MSc-degree**: “The (possible) contribution of fructose
 to improve the performance of an endurance athlete” (26.09.1984).

1982: BCP Janssen Institute, Department Biochemistry, University of Amsterdam.

1982-1983: Ball State University, Human Performance Lab, Muncie, Indiana, USA.
 William Beaumont Hospital, Department of Cardiology, Royal Oak,
 Michigan, USA.

1983-1984: School for Physical Therapy, Den Bosch.

1984-1985

Research Associate, Division of Cardiology, William Beaumont Hospital, **Royal Oak**, MI,
 USA (Head: Dr. G.C. Timmis).

1986-1990

Research Associate (Ph.D.-student), Department of Cardiology, University Hospital
 Maastricht, University of Limburg, The Netherlands (Head: Prof. Dr. H.J.J. Wellens).

1989

Doctoral Thesis for **Ph.D.-degree**: “New observations to identify abnormal impulse
 formation in the intact heart”. University of Limburg, **Maastricht**. (27.10.1989).

1990-1992

Research Scientist (post-doc), Experimental Cardiology, Department of Cardiology,
 Maastricht University, The Netherlands.

1992-1997

Assistant Professor (UD), Department of Cardiology, Maastricht University.

1997-2003

Associate Professor (UHD), Department of Cardiology, Maastricht University.

2003-

Professor and Chair of the Department of Medical Physiology, University Medical Center
Utrecht, **Utrecht**

QUALIFICATIONS

1. Physiologist (SMBWO-onderzoeker)
2. Teaching degree (university) for physiology and anatomy.
3. Governmental certification to perform animal experiments.
4. BROK certificate that monitors quality of clinical research (2012)

MEMBERSHIPS

Member of the “Nederlands Platform Hart en Vaatziekten Onderzoek” (2004 - 2009)

Member of the Scientific Board of the Inter Cardiological Institute of the Netherlands (ICIN: 07/2008-)

Member of the European Heart Rhythm Association (**EHRA**) and member of the Working Group “Cardiac Cellular Electrophysiology” of the **European Society of Cardiology**.

Member of the EHRA 2013-2017 **Scientific Documents Committee**

Fellow of the **American Heart Association (FAHA)**, member of the Council of Basic Cardiovascular Sciences, and of the Biophysical Society, which include FASEB

Member of **Heart Rhythm**, previous the North American Society of Pacing and Electrophysiology (NASPE, #2178) and of the Cardiac Electrophysiology Society **CES (USA)**.

Member of the **Netherlands Society of Physiology (NVF)**; Board Member of the NVF: 2005-2006; President of the NVF: 2007-2011 and Former President of the (Dutch) Society of Exercise Physiology (VIF): 1986-1988.

Member of the **Netherlands Society of Cardiology (NVVC)**. Member and former secretary general (1998-2002) of the Working Group “Hartritmeoornissen” of the NVVC: **NHRA**.

Member of committee “Physiology” of the “Research Foundation Flanders (**FWO Vlaanderen**)” (2009-2012)

AWARDS (2008)

Member of the “Hall of Fame” of the Faculty of Movement Sciences of the Free University Amsterdam: July 2, 2008

EDITORIAL BOARD - EDITOR

1. Br J Pharmacol (2006-2010)
2. BMC Physiology (2007-)

EDITORIAL BOARD – ASSOCIATE EDITOR

1. J Cardiovasc Electrophysiol (2001-2012)
2. J Cardiovasc Pharmacol (2002-)
3. Anatolian J of Cardiology (2001-)
4. Heart Rhythm (2004-)
5. EuroPace (2008-)
6. Arrhythmia and Electrophysiology Review (2011-)

REGULAR REVIEWER JOURNALS

1. Circulation
2. Cardiovasc Res
3. Eur J Pharmacol
4. Circ Res

OCCASIONAL REVIEWER JOURNALS

1. J Am Coll Cardiol
2. Am J Physiol
3. PACE (#552)
4. J Interventional Cardiac Electrophysiology
5. Pharmacogenomics

REVIEWER GRANTS

1. Netherlands Heart Foundation Project Grants (1996-2001)(2009-)
Dekker Grants (2001-)
2. European Young Investigators Award (EURYI) of the European Union Research Organisations Heads of Research Councils (EuroHORCS).
- 2 Czech Science Foundation (GACR)
- 3 Association Francaise contre les Myopathies (AFM)
- 4 Mozaik programme NWO
- 5 TV3 Barcelona, Spanish judgement cie 2008
- 6 FWO (Flanders Scientific Organisation) Med6, Belgie 2009-2012 (2 sessions / year)
- 7 TI Pharma
- 8 OTCA Hungary

REVIEWER ABSTRACTS

- American Heart Association: Basic Science – Animal Models (2002-)
Heart Rhythm – NASPE (2001-)
EuroPace (2008-).

RECIPIENT OF RESEARCH GRANTS

1. The William Beaumont Hospital Research Grant 1984 of \$ 6000, Royal Oak, Michigan, USA, for clinical research to study the athlete's heart.
2. A grant from RESCAR, the Netherlands of \$35.000 for equipment.
3. A grant from the Dutch Heart Association, The Netherlands 1992-1995 (NHS #91.104) of \$ 140.000 for "an animal model to study Torsade de Pointes arrhythmias".
4. A grant from the Dutch State Department of Economic Affairs (STIPT-project MTR 91019) 1992-1995 of \$ 150.000 to validate "stimulus T-measurements for anti-tachycardia pacing" (co-recipient with Dr. Karel Den Dulk).
5. A grant from the Dutch Heart Foundation, The Netherlands 1995-1998 (NHS #94.010) of \$ 260.000 to determine "the relevance of dispersion of repolarization for the initiation of acquired Torsade de Pointes arrhythmias".
6. A grant from the Netherlands Organization for Scientific Research 1996-2000 (NWO #902-16-214 or NWO #950-10-647) of \$ 200.000 to examine "The (sub)cellular mechanisms of ventricular arrhythmias in hypertrophied human myocardium".
7. A grant from Foundation Bekales of BFr. 900.000 to study "The electrophysiologic, structural and functional background for the predisposition of triggered cardiac arrhythmias resulting from complete AV-block in the dog".
8. A grant from the Dutch Heart Foundation, The Netherlands 1999-2002 (NHS #98.042) of \$ 250.000 to determine "Origin and etiology of transseptal dispersion of repolarization in the hypertrophied dog heart".
9. A grant from the Netherlands Heart Foundation, 2004-2008 (NHS Mol Cardiol #) of E. 450.000
10. CONTICA (Controlling Intracellular calcium and arrhythmias), European Grant KP-6 STREP, funded by the European Union LSHM-CT-2005-018802 CONTICA, 2006-2008 of E. 350.000 for Utrecht.
11. NWO Casimir 2005 (#) "Controlling beat-to-beat variability of repolarization will prevent ventricular arrhythmias", 2006-2010 of E 360.000 for BRC Medtronic and Utrecht.
12. TopInstitute Pharma D2-101: An integrated strategy for in silico prediction and preclinical evaluation of the cardiac toxicity of drug candidates. Collaborative effort with the industries Solvay, Notox, and the academic centers Leiden, Nijmegen, Utrecht and Gottingen, 2007-2011 of E 2mE with 300.000 for Utrecht.
13. InterUniversity Attraction Pole (IAP) of the Belgian Government: Molecular and cellular mechanisms of electrical excitability. Collaborative project with 5 Belgian centers (principal investigator Prof K Sipido), 2007-2011 of 50.000 E for Utrecht.
14. CTMM: coordinator of COHFAR: Biomarkers to predict cardiac failure, arrhythmias, and success of treatment: budget E 16 million. National initiative of 7 academic centers and 2 industries: Utrecht funds: 2 million E (out of 13 mE) for 5 years, 2010-2014.
15. Leducq Fondation: Alliance for Calmodulin Kinase II signaling in heart disease: budget \$ 6 million. Core member for the Netherlands together with associate member Prof dr Heck (University Utrecht): E 600.000 out of 10 MDollar) for 5 years, 2009-2013
16. TrigTreat. European Grant KP-7 2009-2014 of 600.000 E (out of 12 ME) for Utrecht, 2010-2015.
17. InterUniversity Attraction Pole (IAP#2) of the Belgian Government: Molecular and cellular mechanisms of electrical excitability. Collaborative project with 5 Belgian centers (principal investigator Prof K Sipido), 2012-2016 of 35.000 E for Utrecht.
18. CVON Valorisation grant TailorCRT. 2013-2014. 800 kE to Medtronic (Dr Scheerder) in which MUMC (Prinzen), Groningen (van Gelder) and UMCU participate.

19. *Octopus valorisation* grant of 1.4 mE to support DH&L projects to be commercialized 2013-2015. Within this grant is the PA-6 research.
20. *CVON* grant: co-PI together with Prof dr A Wilde, “Predict Sudden Cardiac Death” of 1.4 mE out of the 5mE for the consortium, 2013-2017.
21. *EU-CERT ICD (FP-7)*. Comparative Effectiveness Research to Assess the Use of Primary Prophylactic Implantable Cardioverter Defibrillators in Europe. Active as vice PI. In total 6 mE, whereof 400kE for Utrecht.
22. *CRESPACE* (Horizon2020). Adaptive Bio-electronics for chronic cardiorespiratory disease. WP leader for 500 kE, 2017-2020.

COLLABORATIONS

1993

1. Cardiology, University of Oklahoma, Oklahoma City, USA, Prof. Dr. Lazzara and Dr. Szabo.

1994

2. Experimental Cardiology, University of Amsterdam, Amsterdam, The Netherlands. Dr. Ir. J.M.T. de Bakker. ICIN-project #17: Mechanisms and Treatment of Cardiac Arrhythmias.
3. Laboratory for Physiology, Free University Amsterdam, The Netherlands. Dr. C. van Hardeveld. NHS Molecular Biology (M93.008): “Moleculaire basis van sarcoplasmatisch reticulum Ca ATPase regulatie, Ca-homeostasis en electrofysiologie bij pathologische en fysiologische vormen van hypertrofie.

1995

4. Physiology, University of Leuven, Prof. Dr. E. Carmeliet and Dr. K. Sipido. Exchange P. Volders, Ph.D.-student, to gain insight in patch clamping and fluorescence techniques.

1996

5. Physiology CARIM, Dr. F. Prinzen (NHS #95.043, NWO-OZL #902-16-174): “Regression of hypertrophy and normalization of diastolic function after reduction of cardiac volume overload”.
6. Experimental Cardiology, Leiden (Prof. Dr. Van der Laarse), Pharmacology, Groningen (Prof. Dr. W. van Gilst), Experimental Cardiology, Rotterdam (Prof. Dr. Verdouw), Experimental Cardiology, AMC Amsterdam (Prof. Dr. M. Janse): ICIN-project #22: “Hypertrophy and Heart Failure”.

1997

7. Cardiology/Physiology. Van Bilsen en Doevendans. “The characterization the regulatory sequence of the atrial myosin light chain 2 gene, required for atrial cardiomyocyte specific gene expression” (NHS #96.102).
8. Cardiology/Physiology. NWO-program, Prof. Dr. M.A. Allesie. “Pathophysiologic mechanisms of atrial fibrillation. The role of electrical and contractile remodeling and therapeutic implications”.

1999

9. Anatomy/Embryology, University of Amsterdam (Prof. Dr. A. Moorman), Masonic Research Institute, Utica, USA (Dr. C. Antzelevitch) and Cardiology (part of NHS 98.042).
10. Cardiology, Heidelberg (Dr. W Schoels), Germany

2000

11. Experimental Cardiology, Catholic University of Leuven (Dr. K.S. Sipido, Prof. dr. G. Hasenfuss and Prof. Dr. D. Eisner). “Arrhythmogenesis in cardiac hypertrophy and failure: the role of increased Na/Ca exchange expression and activity in ventricular cells”

12. Laboratory for Molecular Biophysics, Physiology and Pharmacology, University of Antwerpen (Prof. Dr. D. Snijders). Differentiële genexpressie als oorzaak van cardiale ritmestoornissen tijdens elektrische remodeling: analyse door middel van DNA micro arrays.

2001

13. Vanderbilt University School of Medicine, Nashville, USA (Dr. A. George, Professor of Medicine and Pharmacology).

2002-2005

14. Antzelevich: Masonic Medical Center, Utica, USA.: exchange of students C Ramaekers and S Winckels

2006

15. Charpentier / Escande, INSERM Nantes: gene transfer biological pacemaker

16. CONTICA network

17. Proteomics with Prof dr Heck (UU)

2007

18. Sipido KS (Leuven) IAP

2008

19. Richard – Montpellier

2009

20. Transatlantic Leducq consortium with A. Heck from Utrecht

2010

21. FP7: TrigTreat

22. CTMM COHFAR

2012

23. Sipido KS (Leuven) IAP#2: 6 Belgian centers

24. FP-7: EU-CERT ICD: 20 European centers

CONTRACT RESEARCH

1993

1. Janssen Pharmaceutica Nederland: Anti-ischemic effects of R56865.

2. Janssen Research Foundation: Anti- and pro-arrhythmic effects of 6OHR.

1994

3. Upjohn Company, USA: Anti-arrhythmic effects of Ibutilide on atrial flutter and fibrillation.

1995

4. Astra, Sweden.

5. Sanofi, France: Acute effects of dronedarone.

1996

6. Bakken Research Center, Medtronic, Maastricht, The Netherlands: Glucose and ischemia.

7. Cordis, Rhoden, The Netherlands: Cooling catheter and AV-block.

1997

8. Sanofi, France: Chronic effects of Dronedarone.

9. Vitatron/Bakken Research Center, Maastricht, The Netherlands: Chronic MAP catheter.

10. Wyeth Avest Research, USA. Dr. T. Colatsky.

1998

11. Cordis, Rhoden, The Netherlands: Cooling catheter and ventricular tachycardias.

1999

12. Proctor and Gamble, USA: Azimilide.

13. Sanofi, France: Amiodarone.

14. Janssen Research Foundation, Belgium: Non invasive determination of dispersion of repolarization.

2000

- 15. Aventis Pharma, Germany
- 16. CryoCor, USA

2001

- 17. Lundbeck, Valby/Copenhagen, Denmark: Sertindole (PhD-project MB Thomsen)

2002

- 18. PAION, Stolberg, Germany: NS-7

2003

- 19. CV Therapeutics, Palo Alto, California, USA: ranolazine: 2003-2004
- 20. Johnson & Johnson, Beerse, Belgium: BVR (post-doc: G. Antoons).

2004

- 21. Vitatron, Dieren, Netherlands: electrogram
- 22. Sanofi-Aventis, AVE0118

2005

- 23. Daiichi, Tokyo, Japan: Moxifloxacin
- 24. CV Therapeutics, Palo Alto, California, USA: ranolazine: 2005-2007
- 25. BRC Medtronic: canine CPCs

2006

- 26. Vitatron-BRC Medtronic: Casimir proposal: (PhD-project: P. Oosterhoff)
- 27. Elbion, Germany: ELB139

2007

- 28. Novocardia/Sequel: K201

2008

- 29. Astra Zeneca: Safety Pharmacology stem cells. Together with Cellartis a PhD project.

2010

- 30. BRC Medtronic

2012-2014

- 31. GiLead, California, USA: project #1 and #2.

Consultant 2008-2010

Astra Zeneca
 Movetis
 Astellos

ORGANIZED WORKSHOP/SYMPOSIA**1996**

- 1. Heterogeneity of ventricular repolarization: relevance for the development of class III agents”
 June 13-14, participants 40.

1998

- 2. “Heart Failure” Dutch Society of Physiology, December 17-18, co-organized with Dr. T. Opthof and R. Bindels, participants 100.

2000

- 3. “2000 Future of Arrhythmology: lessons from the past, promises for tomorrow”, Chairman of the organizing committee, April 15-18, 2000, participants 900.

2003

4. Annual Working Meeting of the Workgroup of Cellular Electrophysiology of the European Society of Cardiology, Utrecht, September 12-14, 2003, chairman of the organizing cie., participants 150.
5. Netherlands Heart Foundation sponsored national PhD-Course Papendal “Cardiac Adaptation”, September 29-October 3 2003, participants 40

2004

6. Symposium Medical Physiology, Utrecht, May 17-18, 2004, participants 50
7. Satellite symposium WG Cell Electrophysiol ESC, participants 80

2005

8. Beat-to-beat variability of repolarization to test for the pro-arrhythmic potential of drugs, co-organised with Dr. P. Volders, Maastricht, April 14-15. participants 80
9. Regenerative Physiology: Stem Cell Therapy: hype or hope. Netherlands Society of Physiology, December 15-16, Arnhem, the Netherlands, participants 75.

2006

10. Joint German – Dutch Meeting Molecular Cardiology, participants 90-100

2007

11. Metabolic Syndrome: fact, fate December 8-9, Arnhem, the Netherlands, participants 75.
12. Beat-to-beat variability at ICE in Istanbul, July 7-8, 2007.

2009

13. Contica meeting (KP6) in Utrecht. June

2011

14. TrigTreat meeting (KP7) in Utrecht. June

2014

15. EU-CERT meeting (KP7) in Utrecht, October 22-24

IDEA DISCLOSURE

1997

1. Medtronic/Bakken Research Center

2013

2. Medtronic/Bakken Research Center

DISSERTATIONS

Thesis of M.A. Vos: New observations to identify abnormal impulse formation in the intact heart. University of Limburg, Maastricht, The Netherlands, October, 1989.

Co-promotor: n=7

1. **Co-promotor:** S.C. Verduyn. March 1992-1996 (**NHS**)
Acquired Torsade de Pointes arrhythmias: role of early afterdepolarizations and dispersion of repolarization. June 14th, 1996.
2. **Co-promotor:** S.H.M. de Groot. February 1993-June 1999 (CARIM 4^c) (**NWO**)
Triggered ventricular arrhythmias in the hypertrophied heart: the role of electrophysiological and functional adaptations. January 23rd, 1998.
3. **Co-promotor:** P.G.A. Volders (cum laude). February 1993-1999, (CARIM 4a)
Cellular mechanisms of acquired Torsade de Pointes in the hypertrophied canine heart. The substrate and the trigger. July 2nd, 1999.
Winner of the Young Investigator Competition NASPE 1999
Recipient of the Herman Snellen Young Investigator Award, Boerhaave Symposium, LUMC, 1999
Best Dissertation 1999 (SNS Prize) of the University of Maastricht
Finalist in the Ph.D. dissertation 1999 competition of the Netherlands Society of Cardiology.
4. **Co-promotor:** H.M. Leerssen. September 1992-June 1996 (**Department of Economic Affairs**)
In vivo observations on stimulus T interval, repolarization and refractoriness: clinical implications for anti-tachycardia pacing. November 3th, 2000.
5. **Co-promotor:** X.H.T. Wehrens. 1998-2003 (**Industry**)
Novel insights in the congenital long QT-3 syndrome. March 22, 2002.
First prize "Stichting Hippocrates Studiefonds", October 6, LUMC, 2000.
Winner of CARIM best dissertation 2002-2003
6. **Co-promotor:** J.M. van Opstal. 1997-2001 (**CARIM**)
Drug induced Torsade de Pointes arrhythmias and sudden cardiac death in the remodeled canine heart. November 8, 2002.
Finalist for best Ph.D. thesis 2002, NVvC, April 25, 2002.
Hamburger Prize, best thesis of the Netherlands Society of Physiology 2002.
7. **Co-promotor:** M. Peschar. 1996-1999 (**NHS**, collaboration with Dr. F. Prinzen).
Reverse remodeling in bradycardia induced volume overload; the role of optimizing the pacing site. January 24, 2003.
Third prize winner of the Young Investigator Award of the Dutch Society of Physiology, 1999.

Promotor: n= 20 including 2016

1. **Promotor:** M. Schoenmakers 1999-2003 (**NHS**).
Ventricular remodeling and arrhythmogenesis in the canine heart. Focus on prevention, March 24, 2004.
"Robles de Medina Award", best poster Einthoven symposium, Leiden, June 9-11, 2002.
"3th NVVC poster price 25-10-2003, Ermelo
2. **Promotor** (together with Prof Dr A Moorman): C. Ramakers 2000-2005 (**NHS + Industry**)
Molecular characterization of ion channel subunits in the normal and remodeled canine heart, March 11, 2005

3. Promotor: M Thomsen 2001-2005 (**Industry**)
Beat-to-beat variability of repolarisation and drug induced Torsades de Pointes in the canine heart, Maastricht, April 15, 2005
Finalist YIA Heart Rhythm 2005; Fellowship HRS 2006 (Rosen MR, NY, USA).
4. Promotor: M. Koenders DIGD, Utrecht, October 2, 2007
5. Promotor: S. Winckels 2003-2007 (**NHS Molecular Cardiology**)
Ventricular electrical remodeling and arrhythmogenesis: observations concerning the involvement and reversibility, Utrecht, December 20, 2007
6. Promotor (together with Prof dr H Crijns): D Doncker 2000-2008 (**Industry**)
“Cardiac Mechanomyopathy: integrating the picture from cell to beating heart”, Maastricht, September 11, 2008. Posterprize NVVC
7. Promotor: A. Oros 2004-2008 (**Industry and Contica (KP6)**). Pharmacologic control of beat-to-beat variability of repolarization to suppress and prevent dofetilide induced TdP in the anesthetized CAVB dog. Utrecht, November 6, 2009.
8. Promotor (together with Prof dr de Bakker): M. Boulaksil 2004-2008 (**NHS Molecular Cardiology**). Utrecht, December 2, 2010.
First poster price at the Young Physiologist meeting of the Netherlands Society of Physiology, 8 dec 2007.
9. Promotor: Peter Oosterhoff (**Casimir NWO – BRC Medtronic** 2006-2010). The use of repolarization variability for risk monitoring. “The rocking of the boat”. Utrecht, May 19, 2011. First poster price at the annual CTMM meeting in 2010.
10. Promotor: Lucas Nalos (**TopInstitute Pharma** 2007-2011). Importance of repolarization reserve in cardiac safety assessment. Utrecht, September 17, 2011.
11. Promotor (together with Prof dr de Bakker): John Jansen 2005-2009 (**NHS 2005B170**),
Abnormal Conduction in the diseased heart. Utrecht, November 1, 2011
12. Promotor: Malin Jonsson (**3V NWO -Astra Zeneca**, 2008-2011). Applicability of human stem cell derived cardiomyocytes for safety pharmacology. Utrecht, December 16, 2011.
Hamburger Prize, best thesis of the Netherlands Society of Physiology 2011.
13. Promotor: Vincent Bourgoigne (**Leducq** 2008-2012). Utrecht, May 14, 2013. The multifunctional role of Calcium in the heart: a tempting target.
14. Promotor: Rosanne Varkevisser (**TrigTreat**, 2010-2014). Is it safe? Adverse drug effects and cardiac arrhythmias. Utrecht, February 6, 2014.
15. Promotor together with Prof A Heck: Siddarth Soni (**F&M UU**, 2009-2013). Maladaptive kinase signaling and protein-protein interactions in cardiac diseases. Utrecht, February 20, 2014.
16. Promotor: Thom Stams (**CTMM**, 2010-2014): Utrecht, June 16, 2014. Torsades de pointes: risk stratification and role of ventricular activation.
First poster price at the Student conference in Utrecht 2008
First price oral presentation NVVC autumn meeting 2013

17. Promoter together with Prof Haas: Christian Blanc (**NHS Jump** and **WKZ**, 2009-2012): Congenital complete Atrioventricular Block. Clinical and Experimental Studies. Utrecht, December 8, 2014.
18. Promoter together with Prof van Rijen: Sanne de Jong (**CTMM**, 2010-2014). Improved detection of cardiac fibrosis: Biomarkers and novel imaging technique, Utrecht, August 27, 2015. First Price for presentation Neth Society of Physiology (NVF 2012).
19. Promotor together with Prof van Rijen: Magda Fontes (**NHS** 2010-2014, **CVON Predict**), Conductional remodeling and arrhythmias in the diseased heart, Utrecht, 3 September, 2015
20. Promotor: Albert Dunnink (**TrigTreat/CTMM** and **EU-CERT-ICD**, 2013-2015). The relation between Bradycardic Dyssynchronous Ventricular Activation, Remodeling and Arrhythmogenesis. Utrecht, 30 juni, 2016.
21. Promotor: Sofieke Wijers (**TrigTreat/CTMM**, 2011-2014), The potential role of electrocardiographic markers to tune cardiac device therapy, Utrecht, 11 april, 2017. Posterprice ISCE 2013, San Jose, USA.
22. Promotor: Bastiaan du Pre (**MD/PhD grant UMCU**, 2013-2015)
23. Promotor: H Driessen (**CVON Predict**, 2014-2016)
24. Promotor: A Bossu (industry sponsored **GiLead**, 2013-2016)
25. Promotor: Chinese Yuan Li (**CSC grant**, 2013-2017)
26. Promotor: Eline Kessler (**CVON Predict**, 2014-2017)
27. Promotor: Lotte Koopmans (**CVON Predict**, 2014-2017)
28. Promotor: Iris ter Horst (industry sponsored **St Jude**, 2014-2016)
29. Promotor: David Spenkeler (**EU CERT continuation**)
30. Promotor (together with prof J Maessen): J Jungschleger

FACULTY OPPONENT (outside employer)

1. C. Abrahamsson (member of the Ph.D.-committee). Gothenburg, May 3, 1996.
2. T. van Noord, Groningen
3. Y. Blauw, Maastricht
4. N. Kuijpers, 28 May, 2008, TU Eindhoven
5. V Flore, Leuven, 29 June 2012.
6. D Jonsson, Maastricht, March 2013
7. M Strik, Maastricht, 6 december 2013.
8. AM De Jong , Groningen, 13 January 2014
9. Amsterdam, 2017

PUBLICATIONS IN SCIENTIFIC INTERNATIONAL JOURNALS

1985

1. M. Vos, A.M. Hauser, R.H. Dressendorfer, T. Hashimoto, P. Dudlets, G.C. Timmis, S. Gordon. Enlargement of the right heart in the endurance athlete: a two-dimensional echocardiographic study. **Int J Sports Med** 1985; 6: 271-275.
2. A.M. Hauser, R.H. Dressendorfer, M. Vos, T. Hashimoto, S. Gordon, G.C. Timmis. Symmetrical cardiac enlargement in highly trained endurance athlete: a two-dimensional echocardiographic study. **Am Heart J** 1985; 109: 1038-1044.

1988

3. A.P.M. Gorgels, M.A. Vos, I.S. Letsch, E.A. Verschuuren, F.W.H.M. Bär, J.H.A. Janssen, H.J.J. Wellens. Usefulness of the accelerated idioventricular rhythm as a marker for myocardial necrosis and reperfusion during thrombolytic therapy in acute myocardial infarction. **Am J Cardiol** 1988; 61: 231-235.

1989

4. M.A. Vos, A.P.M. Gorgels, J.P.H. Drenth, H.D.M. Leunissen, H.J.J. Wellens. Termination of ouabain-induced ventricular tachycardia by flunarizine in conscious dogs. **Eur J Pharmacol** 1989;165:139-145.
5. M.A. Vos, A.P.M. Gorgels, H.D.M. Leunissen, P. Brugada, H.J.J. Wellens. The effect of an entrainment protocol on ouabain-induced ventricular tachycardia. **PACE** 1989; 12: 1485-1493.

1990

6. M.A. Vos, A.P.M. Gorgels, H.D.M. Leunissen, H.J.J. Wellens. Flunarizine allows differentiation between mechanisms of arrhythmias in the intact heart. **Circulation** 1990; 81: 343-349.
7. M.A. Vos, A.P.M. Gorgels, B. de Wit, J.P.H. Drenth, R.T.A.M. van Deursen, H.D.M. Leunissen, H.J.J. Wellens. Premature escape beats: a model for triggered activity in the intact heart? **Circulation** 1990; 82: 213-224.
8. M.A. Vos, A.P.M. Gorgels, H.D.M. Leunissen, H.J.J. Wellens. The in vivo response of ouabain-induced arrhythmias to pacing: acceleration instead of termination. **Am Heart J** 1990; 120: 604-611.

1991

9. M.A. Vos, A.P.M. Gorgels, H.D.M. Leunissen, R.T.A.M. van Deursen, H.J.J. Wellens. Significance of the number of stimuli to induce triggered arrhythmias in the intact heart. **Circ Res** 1991; 68: 38-44.
10. K. den Dulk, H. Leerssen, M. Vos, H.D.M. Leunissen, J. Kersemakers, M. Begemann, H.J.J. Wellens. Applicability of the stimulus-t interval for antitachycardia pacing. Proceedings of the World Congress of Pacing and Electrophysiology. **PACE** 1991; 14(II): 1757-1761.

1992

11. H.J.J. Wellens, J.L.R.M. Smeets, M. Vos, A.P.M. Gorgels. Anti-arrhythmic drug treatment, need for continuous vigilance. **Br Heart J** 1992; 67: 25-33.
12. A.P.M. Gorgels, M.A. Vos, J.L.R.M. Smeets, H.J.J. Wellens. Ventricular arrhythmias in heart failure. **Am J Cardiol** 1992; 70: 37C-43C.
13. M.A. Vos, A.P.M. Gorgels, H.D.M. Leunissen, M.G. Havenith, E. Kriek, J.L.R.M. Smeets, H.J.J. Wellens. Programmed electrical stimulation and drugs identify two subgroups of ventricular tachycardias occurring 16 to 24 hours after occlusion of the left anterior descending artery. **Circulation** 1992; 85: 747-755.
14. A.P.M. Gorgels, H.J.J. Wellens, M.A. Vos. Aviation and anti-arrhythmic drugs. **Eur Heart J** 1992; 13: H144-148.
15. M.A. Vos, A.P.M. Gorgels, H.D.M. Leunissen, Th. van der Nagel, F.J.J. Halbertsma, H.J.J. Wellens. Further observations to confirm the arrhythmia mechanism specific effects of flunarizine. **J Cardiovasc Pharmacol** 1992; 19: 682-690.

1993

16. T. Fazekas, B.J. Scherlag, M. Vos, H.J.J. Wellens, R. Lazzara. Magnesium and the heart. Antiarrhythmic therapy with Magnesium. **Clin Cardiol** 1993; 16: 768-774.
17. M.A. Vos, R.T.A.M. van Deursen, A.P.M. Gorgels, H.D.M. Leunissen, H.J.J. Wellens. R56865, an antiarrhythmic drug with class III effects that terminates ouabain-induced ventricular tachycardia in an inverse rate-dependent manner. **Cardiovasc Res** 1993; 27: 1491-1497.
18. A.P.M. Gorgels, M.A. Vos, R. Mulleneers, C. de Zwaan, F.W.H.M. Bär, H.J.J. Wellens. Value of the electrocardiogram in diagnosing the number of severely narrowed coronary arteries in rest angina pectoris. **Am J Cardiol** 1993; 72: 999-1003.
19. T. Fazekas, M.A. Vos, H.D.M. Leunissen, H.J.J. Wellens. Effects of magnesium and ethmozin on ventricular tachycardia induced by ouabain and ventricular pacing in conscious dogs with complete AV-block. **Acta Physiol Hungarica** 1993; 81: 59-70.

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20. M.A. Vos, T. Fazekas, A.P.M. Gorgels, H.D.M. Leunissen, H.J.J. Wellens. The action of MgSO₄ differs from moricizine and verapamil on ouabain-induced ventricular tachycardia in normomagnesemic conscious dogs. **J Cardiovasc Pharmacol** 1994; 23: 252-258.
21. M.A. Vos, A.P.M. Gorgels, G.C. Lipcsei, S.H.M. de Groot, H.D.M. Leunissen, H.J.J. Wellens. Mechanism specific anti-arrhythmic effects of the potassium channel activator Levromakalim in repolarization-dependent tachycardias. **J. Cardiovasc Electrophysiol** 1994; 5: 731-742.
22. H. Leerssen, M.A. Vos, K. den Dulk, J. van der Zande, H.J.J. Wellens. Is the ventricular effective refractory period different when determined by incremental versus decremental scanning; the effect of pacing cycle length, d-sotalol and levromakalim. Proceedings of CardioStim, **PACE** 1994; 17(II):2084-2089.

23. H. Leerssen, M.A. Vos, K. den Dulk, J. van der Zande, M. Begemann, H.J.J. Wellens. Inter- and intraindividual variation in shortening of ventricular effective refractory period after an abrupt decrease in pacing cycle length. Proceedings of CardioStim, **PACE** 1994; 17(II):2079-2083.

1995

24. M.A. Vos, S.C. Verduyn, A.P.M. Gorgels, G.C. Lipcsei, H.J.J. Wellens. Reproducible induction of early afterdepolarizations and Torsade de Pointes arrhythmias by d-sotalol and pacing in dogs with chronic AV-block. **Circulation** 1995;91:864-872.
25. S.C. Verduyn, M.A. Vos, J. van der Zande, H.D.M. Leunissen, A.P.M. Gorgels, H.J.J. Wellens. The effect of flunarizine and ryanodine on acquired Torsade de Pointes arrhythmias in the intact canine heart. **J Cardiovasc Electrophysiol** 1995; 6:189-200.
26. S.H.M. de Groot, M.A. Vos, A.P.M. Gorgels, H.D.M. Leunissen, B.J. van der Steld, H.J.J. Wellens. Combining monophasic action potentials with pacing to demonstrate delayed afterdepolarizations and triggered arrhythmias in the intact heart: value of the diastolic slope. **Circulation** 1995; 92: 2697-2704.

1996

27. A.P.M. Gorgels, A. van den Dool, A. Hofs, R. Mulleneers, J.L.R.M. Smeets, M.A. Vos, H.J.J. Wellens. Comparison of procainamide and lidocaine in terminating sustained monomorphic ventricular tachycardia. **Am J Cardiol** 1996; 78: 43-46.

1997

28. P.G.A. Volders, A. Kulscar, M.A. Vos, K.R. Sipido, H.J.J. Wellens, R. Lazzara, B. Szabo. Similarities between early and delayed afterdepolarizations induced by isoproterenol in canine ventricular myocytes. **Cardiovasc Res** 1997; 34: 348-359.
29. S.C. Verduyn, M.A. Vos, J. van der Zande, F.F. van der Hulst, H.J.J. Wellens. Role of interventricular dispersion of repolarization in acquired Torsade de Pointes arrhythmias: reversal by Magnesium. **Cardiovasc Res** 1997; 34: 453-463.
30. S.C. Verduyn, M.A. Vos, J. van der Zande, A. Kulscar, H.J.J. Wellens. Further observations to confirm the importance of dispersion of repolarization and early afterdepolarizations in the genesis of acquired Torsade de Pointes arrhythmias: a comparison between almokalant and d-sotalol using the dog as its own control. **J Am Coll Cardiol** 1997; 30: 1575-1584.
31. H.J.J. Wellens, P.A.F.M. Doevendans, J.L.R.M. Smeets, L.M. Rodriguez, K. den Dulk, C. Timmermans, M. Vos. Arrhythmia risk: electrophysiological studies and monophasic action potentials. Proceedings of the IV Interlaken Symposium: Arrhythmia Risk Stratification, M.Malik, D. Andresen (eds.). **PACE** 1997; 20(II):2560-2565.

1998

32. M.A. Vos, S.R. Golitsyn, K. Stangh, M.Y. Ruda, L. van Wijk, J.D. Harry, K.T. Perry, P. Touboul, G. Steinbeck, H.J.J. Wellens for the Ibutilide/Sotalol Comperator Study Group. Superiority of ibutilide (a new class III agent) over dl-sotalol in the converting atrial flutter and fibrillation. A multicenter trial with 300 patients. **HEART** 1998;79:568-575.

33. H.M. Leerssen, M.A. Vos, K. den Dulk, J. van der Zande, A.M. Muytjens, M.J. Begemann, H.J.J. Wellens. Steady state and dynamic behavior of ventricular repolarization and refractoriness in the dog: the effect of multiple cycle length changes and d-sotalol administration. **PACE** 1998; 21: 1766-1777.
34. M.A. Vos, S.H.M. de Groot, S.C. Verduyn, J. van der Zande, H.D.M. Leunissen, J.P.M. Cleutjens, M. van Bilsen, M.J.A.P. Daemen, J.J. Schreuder, M.A. Allesie, H.J.J. Wellens. Enhanced susceptibility for acquired Torsade de Pointes arrhythmias in the dog with chronic, complete AV-block is related to cardiac hypertrophy and electrical remodeling. **Circulation** 1998; 98: 1125-1135.
35. P.G.A. Volders, K.R. Sipido, M.A. Vos, A. Kulscar, S.C. Verduyn, H.J.J. Wellens. Cellular basis of biventricular hypertrophy and arrhythmogenesis in dogs with chronic, complete AV-block and acquired Torsade de Pointes arrhythmias. **Circulation** 1998; 98: 1136-1147.
36. L.M. Rodriguez, H.D.M. Leunissen, A. Hoekstra, B.J. Korteling, J.L.R.M. Smeets, C. Timmermans, M. Vos, M.J.A.P. Daemen, H.J.J. Wellens. Transvenous cold mapping and cryoablation of the AV-node in dogs: chronic observations of the lesions and comparison to those obtained with radiofrequency ablation. **J Cardiovasc Electrophysiol** 1998; 9:1055-1061.

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38. S.H.M. de Groot, M.A. Vos, A.P.M. Gorgels, H.D.M. Leunissen, M.Hermans, L.R.B. Dohmen, H.J.J. Wellens. The dynamic behavior of the diastolic slope of the monophasic action potential can be related with the occurrence and maintenance of delayed afterdepolarization dependent arrhythmias in the canine heart. **PACE** 1999; 22:49-59.
39. S.C. Verduyn, M.A. Vos, H.D.M. Leunissen, J.M. van Opstal, H.J.J. Wellens. Evaluation of the acute electrophysiological effects of intravenous dronedarone, an amiodarone like agent, with special emphasis on ventricular repolarization and acquired Torsade de Pointes arrhythmias. **J Cardiovasc Pharm** 1999; 33: 212-222.
40. H.M. Leerssen, M.A. Vos, K. den Dulk, J. van der Zande, H.J.J. Wellens. Rate dependent effects of procainamide on the threshold current for pacing in the setting of post-repolarization refractoriness in dogs. **PACE** 1999; 22: 291-301.
41. P.G.A. Volders, K.R. Sipido, M.A. Vos, R.L.H.M.G. Spätjens, H.D.M. Leunissen, E. Carmeliet, H.J.J. Wellens. Downregulation of delayed rectifier K⁺ current in dogs with chronic complete atrioventricular block and acquired Torsade de Pointes. **Circulation** 1999;100:2455-2461.

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42. H.M. Leerssen, M.A. Vos, R. Houben, K. den Dulk, H.J.J. Wellens. The high uniformity of left and right ventricular repolarization dynamics induced by an abrupt decrease in pacing cycle length in the dog is not affected by left ventricular ischemia. **J Cardiovasc Electrophysiol** 2000; 11:421-429.

43. P.G.A. Volders, M.A. Vos, B. Szabo, K.R. Sipido, S.H.M.A. de Groot, A.P.M. Gorgels, H.J.J. Wellens, R. Lazzara. Progress in the understanding of cardiac early afterdepolarizations and Torsade de Pointes: time to revise current concepts. **Cardiovasc Res** 2000;46:376-392.
44. K.R. Sipido, P.G.A. Volders, S.H.M.A. de Groot, F. Verdonck, F. van de Werf, H.J.J. Wellens, M.A. Vos. Enhanced Ca²⁺ release and Na/Ca exchange activity in hypertrophied canine ventricular myocytes: a potential link between contractile adaptation and arrhythmogenesis. **Circulation** 2000; 102:2137-2144
45. S.H.M.A. de Groot, M. Schoenmakers, M.M.C. Molenschot, H.D.M. Leunissen, H.J.J. Wellens, M.A. Vos. Contractile adaptations preserving cardiac output predispose the hypertrophied canine heart for DAD-dependent ventricular arrhythmias. **Circulation** 2000;102:2145-2151
46. H.M.W. van der Velden, L. van der Zee, M.C.E.F. Wijffels, C. van Leuven, R. Dorland, M.A. Vos, H.J. Jongasma, M.A. Allesie. Atrial fibrillation in the goat induced changes in monophasic action potential and in mRNA expression of ion channels involved in repolarization. **J Cardiovasc Electrophysiol** 2000; 11: 1262-1269
47. M.A. Vos, B. Göreneck, S.C. Verduyn, F.F. van der Hulst, H.D.M. Leunissen, L. Dohmen, H.J.J. Wellens. Observations on the onset of TdP arrhythmias in the acquired long QT-syndrome. **Cardiovasc Res** 2000; 48: 421-429.

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50. J.M. van Opstal, S.C. Verduyn, H.D.M. Leunissen, S.H.M. de Groot, H.J.J. Wellens, M.A. Vos. Electrophysiological parameters indicative for sudden cardiac death in the dog with chronic complete AV-block. **Cardiovasc Res** 2001; 50: 354-361.
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52. M.A. Vos, J.G.M. Jungschleger. Transmural repolarization gradients in vivo: the flukes and falls of the endocardium. **Cardiovasc Res** 2001; 50: 423-425.
53. D. Nuyens, M. Stengl, S. Dugarmaa, T. Rossenbacker, V. Compennolle, Y. Rudy, J.F. Smits, W. Flameng, C.E. Clancy, L. Moons, M.A. Vos, M. Dewerchin, K. Benndorf, D. Collen, E. Carmeliet, P. Carmeliet. Abrupt rate acceleration or premature beats cause life-threatening arrhythmias in mice with long QT-syndrome. **Nat Medicine** 2001;7:1021-1027.
54. M.A. Vos. Preclinical evaluation of anti-arrhythmic drugs: new ones should be safe to be successful. **J Cardiovasc Electrophysiol** 2001; 12: 1034-1036

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56. M.A. Vos, J.M. van Opstal, H.D.M. Leunissen, S.C. Verduyn. Electrophysiologic parameters and predisposing factors in the generation of drug induced Torsade de Pointes arrhythmias. **Pharmacology and Therapeutics** 2001; 92: 109-122.

2002

57. K.R. Sipido, P.G.A. Volders, M.A. Vos, F. Verdonck. Altered Na/Ca exchange activity in cardiac hypertrophy and heart failure: a new target for therapy? **Card Res** 2002; 53(4):782-805.
58. J.M. van Opstal, S.C. Verduyn, S.K.G. Winckels, H.M. Leerssen, H.D.M. Leunissen, H.J.J. Wellens, M.A. Vos. The JT-area indicates dispersion of repolarization in dogs with atrioventricular block. **J Interventional Cardiac Electrophysiol** 2002; 6:113-120.
59. M.A. Vos. Do we understand the electrophysiological mechanisms responsible for drug induced cardiac arrhythmias. **J Cardiovasc Pharmacol** 2002; 40: 647-650.
60. C. Timmermans, L.M. Rodriguez, R.J. van Suylen, J. Leunissen, M. Vos, G. Ayers, H.J.G.M. Crijns, H.J.J. Wellens. Catheter based cryoablation produces chronic linear lesions in the canine right atrial isthmus. **J Interventional Cardiac Electrophysiol** 2002; 7:149-155.
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22. JMT de Bakker, JGM Jungschleger, MA Vos. Electrophysiological mapping of the right and left ventricle in experimental animals. Chapter 13 in Book Shenasa, Hindricks, Borggreffe and Breithardt eds. Wiley Blackwell 2009, 152-162.

2011

23. Marguérite E.I. Schipper, Sjoukje Lok, Hub Dullens, Joyce Van Kuik, Frits H.J. Gmelig-Meyling, Jaap Lahpor, Marc Vos, Matthijs F.M. Van Oosterhout, Arnoud Van Der Laarse, Nicolaas De Jonge, and Roel A. De Weger. Altered expression of mRNA and miRNA during mechanical support of the failing human heart. Chapter in book “Ventricular Assist Devices, ISBN 978-953-307-164-0, edited by Jeffrey Shuhaiber, p 49-66, Rijeka, Croatia.

2013

24. JM de Bakker, MA Vos. Evolution of cardiac mapping: from direct analog to digital multi dimensional recording. Chapter 1 in Cardiac Mapping eds., Shenasa and Breithardt, 4th edition, Wiley Blackwell 2013; 3-11.
25. V Bourgonje, AAB van Veen, MA Vos. Ventricular electrical remodeling in compensated cardiac hypertrophy. Chapter 23 in “Electrical Disaseses of the heart: genetics, mechanisms, treatment and prevention. Gussak and Antzelevitch eds., Springer Verlag, 2nd edition, London, 2013: 387-398.
26. C Blank, P Loh, MA Vos. Chapter 106: AV-block: in Zipes and Jaliffe. Electrophysiology from cell to bedside, 6th edition, Elsevier 2013: 1042-1050.

2016

27. SM Korte, MJ Houtman, JA Meeuwsen, I Kercher, J Zandvoort, MA Vos, TP de Boer, MA van der Heyden. Kir2.1-Dendra2: A new tool to study drug induced ion channeltrafficking defects. Adaptative Biology and Medicine, 2016: 8.

INVITED LECTURES**1987**

1. In vivo differentiation of triggered activity from other arrhythmogenic mechanisms. Department of Cardiology, William Beaumont Hospital, Royal Oak, Michigan, USA, November 12, 1987.

1989

2. Identification of arrhythmogenic mechanisms in the intact heart. Department of Physiology, University of Limburg, Maastricht, The Netherlands, December 22, 1989.

1990

3. Value of flunarizine to study arrhythmia mechanisms. Liege-Maastricht meeting, Liege, Belgium, January 18, 1990.
4. Identification of mechanisms responsible for cardiac arrhythmias. Department of Cardiology, University Hospital Leiden, The Netherlands, January 5, 1990.

1991

5. Abnormal automaticity in the intact heart. Working Group on Cellular Cardiac Electrophysiology. European Society of Cardiology, Amsterdam, The Netherlands, August 19, 1991.
6. Abnormal automaticity: basic mechanisms. Workshop on basic problems in cardiac automaticity. Department of Physiology, Academic Medical Center, Amsterdam, The Netherlands, August 20, 1991.
7. Triggered activity, the intact heart. International Society of Heart Research, Leuven, Belgium, September 13, 1991.

1992

8. The use of flunarizine to identify triggered arrhythmias in the intact heart. University of Oklahoma, Cardiovascular Section, Oklahoma, USA, November 24, 1992.
9. Anti- and proarrhythmic effects of class III agents. KNOLL Pharmaceuticals, Ludwigshaven, Germany, December 10, 1992.

1993

10. Safety profile of class III agents. Janssen Pharmaceutica, Beerse, Belgium, April 27, 1993.

1994

11. Induction of Torsade de Pointes arrhythmias: comparison of d-sotalol with almokalant. Astra Hassle, Mölndal, Sweden, January 26, 1994.
12. Torsade de Pointes arrhythmias: caused by EADs or dispersion. Department of Pharmacology, Columbia University, New York, USA, March 18, 1994.
13. Clinical relevance of abnormal automaticity. North American Society of Pacing and Electrophysiology, May 14, 1994.
14. Anti- and proarrhythmic effects of R100.000. Janssen Research Foundation, Beerse, Belgium, September 19, 1994.
15. Determination of the relevant mechanisms and their mutual relationship responsible for acquired Torsade de Pointes arrhythmias. NWO, DWG Heart Function, October 18, 1994.

1995

16. Electrophysiologic mechanisms in acquired Torsade de Pointes. Cardiology, Brigham and Women's Hospital, Boston, May 2, 1995.
17. Acquired Torsade de Pointes arrhythmias. Cardiology, Heidelberg, Germany, August 8, 1995.
18. Electrophysiologic aspects of acquired Torsade de Pointes arrhythmias. Working Group of Cardiac Arrhythmias of the NVVC, Utrecht, September 13, 1995.
19. Torsade de Pointes arrhythmias. Experimental Cardiology, AMC Amsterdam, September 28, 1995.
20. (Sub)cellular mechanisms of ventricular arrhythmias in hypertrophied human myocardium. NWO, DWG Heart Function, October 25, 1995.

1996

21. Ventricular hypertrophy and triggered arrhythmias. Physiology, Free University of Amsterdam, February 5, 1996.
22. Proarrhythmia: mechanisms. Investigators Meeting Ibutilide, Barcelona, March 9, 1996.
23. How to develop an animal model that is relevant for arrhythmias research. "10 years University Hospital Maastricht", April 19, 1996.
24. Compensated biventricular hypertrophy: relevance for induction of Torsade de Pointes arrhythmias. Astra Sweden, May 2, 1996.
25. Torsade de Pointes-why do they start, why do they stop? Astra-ECG meeting, Thurnberry Scotland, June 10, 1996.
26. Inter- and intraventricular dispersion of repolarization: regional differences and Torsade de Pointes arrhythmias. Workshop "Heterogeneity of ventricular repolarization", Maastricht, June 14, 1996.

27. Physiologic BiVentricular hypertrophy and triggered arrhythmias in the dog. Columbia University (November 15, 1996, Dr. M. Rosen) and Wyeth Laboratories (November 7th, 1996, Dr. T. Colatzky).
- 1997**
28. Mechanisms of arrhythmias in cardiac hypertrophy and failure. Lecture for CVOI in Boston: From the vessel wall to the myocardium: a molecular metabolic, clinical and epidemiologic approach. Boston, October 8-12, 1997.
29. Enhanced susceptibility for triggered arrhythmias in a canine model of compensated biventricular hypertrophy. Massachusetts General Hospital, Boston, October 10, 1997.
- 1998**
30. Clinical applicability of the monophasic action potential catheter: current and future possibilities. Vitatron, Dieren, March 19.
31. Triggered ventricular arrhythmias in the hypertrophied heart. New York Hospital, New York, March 27.
32. The role of ventricular hypertrophy in the occurrence of life threatening ventricular arrhythmias. Osmangazi University, Eskisehir, Turkey, April 20.
33. Ventricular arrhythmias in the hypertrophied heart. NWO, DWG Heart Function, Lunteren, April 27.
34. Atrial fibrillation: not a benign disease. UpJohn Pharmacia Meeting, London, October 3 (CVOI accredited).
35. New anti-arrhythmic drugs. Dutch Societies of Pharmacology and Clinical Pharmacology. Oss, October 30.
36. Transseptal dispersion of repolarization in situ. Masonic Research Institute, Utica, New York, November 13.
- 1999**
37. Atrial fibrillation. Round Table Meeting Amsterdam (organizer Dr. O. Kamp). Amsterdam, January 26.
38. Transseptal dispersion of refractoriness for TdP in a canine model. ICIN project day, Utrecht, March 24.
39. Atrial fibrillation: not a benign disease. Oost Nederlands Cardiologisch Genootschap (organizer: Dr. H. Groeneveld), Apeldoorn, April 26.
40. Atrial fibrillation: not a benign disease. Ignatius Ziekenhuis Breda (organizer: Dr. H. Kingma), Breda, June 10, 1999.
41. Perspective of amiodarone-like agents in the treatment of cardiac arrhythmias. Satellite Symposium Second European Congress of Pharmacology. Congress of Pharmacology, Budapest, July 3-7.
42. Bradycardia induced electrical remodeling. European Society of Cardiology, Barcelona, August 30.
43. Atrial fibrillation. Canisius-Wilhelmina Ziekenhuis, (organizer: Dr. Hooghoudt), Nijmegen, September 27.
- 2000**
44. Anti-arrhythmic drugs and Torsade de Pointes arrhythmias. Pfizer, Sandwich, United Kingdom, February 24, 2000.
45. Torsade de Pointes in in-vivo models. European Society of Cardiology, Education and Training Course, Nice, April 3, 2000.
46. Acquired Torsade de Pointes. Roche, Switzerland, June 30, 2000.
47. Electrophysiological and molecular aspects of drug induced TdP. VII World Congress on Clinical Pharmacology and Therapeutics. Florence, Italy, July 15-20, 2000.
48. Electrical remodeling of the heart. European Society of Cardiology, Amsterdam, August 27, 2000.
49. Ventricular remodeling and sudden cardiac death in the CAVB dog. Sociedad Argentina de Cardiologia, Buenos Aires, Argentina, September 24-27, 2000.
50. Atrial and ventricular electrical remodeling on the basis of cardiac rate. Sociedad Argentina de Cardiologia, Buenos Aires, Argentina, September 24-27, 2000.
51. Acquired Torsade de Pointes: can we predict the pro-arrhythmic potential of drugs? Sociedad Argentina de Cardiologia, Buenos Aires, Argentina, September 24-27, 2000.
- 2001**
52. Spatial dispersion of ventricular action potential duration and Torsade de Pointes arrhythmias. The Art of Cardiology in the heart, Milan, Italy, April 17-20, 2001.
53. Ventricular remodeling in the CAVB dog: arrhythmogenic consequences, Masonic Research Laboratories, Utica, USA, April 30, 2001.
54. Electrical remodeling and its reversal in ventricular hypertrophy. North American Society of Pacing and Electrophysiology, Boston, USA, May 5, 2001.
55. Electrical remodeling. Aritmie congres, Eskisehir, Turkey, September 8-11, 2001.
56. Transmural dispersion of repolarization: assessment and arrhythmogenic consequence. JRF; October 3, 2001.
- 2002**
57. Remodeling in hypertrophic cardiomyopathy. American College of Cardiology. Atlanta, USA, March 17-20, 2002.
58. Ventricular remodeling in the CAVB dog: an unique model to screen for pro-arrhythmic potential of drugs. CV Therapeutics, Palo Alto, California, USA, May 6, 2002.
59. Regression of ventricular hypertrophy and its effect on electrical remodeling. Einthoven symposium, Leiden, The Netherlands, June 11, 2002.

60. Mechanistic insights from ambulatory animal models. *Cardiostim*, Nice, France, June 20, 2002.
61. Parallels and divergence between congenital and drug induced long QT syndromes. *ISHR*, Szeged, Hungary, July 6, 2002.
62. Reversed remodeling of hypertrophied myocardium during pacing. *European Society of Cardiology*, Berlin, Germany, September 2, 2002.
63. Atrial and ventricular electrical remodeling: consequences for treatment with anti-arrhythmic drugs. *Catharina Ziekenhuis Eindhoven*, The Netherlands, September 12, 2002.
64. Cardiac remodeling in the hypertrophied heart. *Conférence Philippe Laudat*, Biarritz, France October 5-9, 2002.
- 2003**
65. Pro-arrhythmia: is there an increased risk in heart failure. *Universtitats Klinikum Munster*, Germany, February 4, 2003.
66. Detection and reversal of electrical remodeling in patients. *Vitatron*, Arnhem, The Netherlands, February 19, 2003
67. Parallels and divergence between congenital and acquired long QT. *New trends in cardiovascular biology: bridging the gap between clinical practice and basic science. Joint meeting of the German and Dutch Molecular Cardiology groups*. Munich, March 1, 2003.
68. Animal models to assess the risk for TdP arrhythmias. *Cardiovascular Therapeutics (CVT) organized meeting during NASPE*, May 15, 2003
69. Ionic current changes produced by chronic AV-block, *NASPE*, Washington, May 16, 2003.
70. Differential electrical remodeling in compensated and decompensated hearts. *International Congress on Electrocardiography*. Helsinki, June 12-15, 2003.
71. From QT prolongation to Torsade de Pointes: mechanisms and risk estimates with special reference to NS-7 (PN06), *PAION*, Aachen, Germany, July 3, 2003.
72. Genetic basis of drug induced arrhythmias. *XIV Paavo Nurmi Symposium "Genetic and Molecular Basis of Cardiac Arrhythmias*. August 27-29, Helsinki, Finland.
73. *Excitation-Contraction*, *ACCSAP course Den Bosch*, November 6
74. Mechanisms of arrhythmogenesis in the failing heart. *American Heart Association*, Orlando, November 9, 2003
75. How to predict the potential of serious ventricular arrhythmia of anti-psychotics in animals and man. *Lundbeck*, December 17, Copenhagen.
- 2004**
76. "Kameritmoestoornissen: Waar ontmoet ziekte de genetica", *ACCSAP course Geldrop*, May 27
77. "Dogs with heart block", *Cardiostim*, June 16, Nice, France.
78. "Beat to beat variability of repolarization: Quantification of repolarization reserve?" *ESC Working Group on Cellular Electrophysiology*, September 11, Szeged, Hungary
79. "In vivo animal model of lethal arrhythmias" and "Arrhythmogenic substrates in hypertrophy and heart failure", *ISHR Japanese Section*, November 24-25, Kofu, Japan.
- 2005**
80. "Drug induced Torsade de Pointes: enhanced prediction is urgently required in the clinic and safety pharmacology department", *Beat-to-beat variability of repolarization to test for the pro-arrhythmic potential of drugs*, *Maastricht*, April 14-15.
81. "Ventricular remodeling and arrhythmias", *3th International Summer School Cardiac Arrhythmias*, September 9-12, *Eskesehir*, Turkey
82. "Drug Induced Torsade de Pointes: beyond repolarization duration", *Safety Pharmacology Society*, September 27-29, Mannheim, Germany.
83. "In vivo models of TdP arrhythmia", *Cardiovascular Safety Pro-Arrhythmia Models*, *HESI (Health and Environmental Sciences Institute)*, Washington, November 2-3.
84. Round Table (Astra Zeneca) QT-prolongation and pro-arrhythmic risk, Dallas, November 10-11
- 2006**
85. "Atrial Fibrillation: Consequence and Cause of Left Ventricular Dysfunction". *International Congress on Electrocardiography (ICE)*, Cologne, Germany, June 2006
86. Arrhythmias in Heart Failure and Hypertrophy. *International Congress on Electrocardiography (ICE)*, Cologne, Germany, June 2006
87. "Drug induced long QT syndrome: what can we learn from animal models. *Eur Society of Cardiology*, Barcelona, Spain, September 3.
88. "Can repolarization reserve be evaluated in the clinical setting? *Eur Society of Cardiology*, Barcelona, Spain, September 5.
89. Grand Round at the Department of Cardiology, *Iowa City*, United States.

90. "Molecular and electrophysiological differences between right and left ventricles". Cardiac Electrophysiological Society (annual meeting), Chicago, November 11.
91. "Controlling beat-to-beat variability is anti-arrhythmic". Emerging Molecular target for the treatment of cardiac arrhythmias. Am Heart Association, Chicago, November 12.
92. "How to detect drug induced long QT syndrome risk", Am Heart Association, Chicago, Nov 13.
93. "Novel methods for predicting drug induced arrhythmias". Cardiac Safety Conference organized by Drug Information Association (DIA) in Berlin, Germany, December 4-5.
94. "Ventricular remodeling and arrhythmogenesis". Pathology, UMCU, December 13.
- 2007**
95. "Cellular basis for ventricular arrhythmias in hypertrophic and dilated cardiomyopathy". International Society for Computerized Electrocardiology (ISCE), Cancun, April 22, Mexico
96. "Increasing repolarisation reserve by Flunarizine is anti-arrhythmic". Clinical Electrophysiology, Case Western University, Cleveland, USA, April 26, 2007
97. "Interventricular dispersion", Heart Rhythm Meeting in Denver, USA, May 10, 2007
98. "Tissue level models, wedges, Langendorffs, and the intact heart", Heart Rhythm Meeting in Denver, USA, May 10, 2007.
99. Cardiale elektrische remodelering: uitputting van reserves? CVOI programma Tour de Horizon VII, Noordwijk, 25-26 mei.
100. Inhibition of the late sodium current to suppress Torsade de Pointes caused by potassium channel blockers. Int Society Heart Research (ISHR), Bologna, Italy, June 25.
101. "Drug induced TdP: value of BVR to detect pro-arrhythmic properties of drugs in animal models". International Congress on Electrocardiology (ICE), Istanbul, Turkey, June 30
102. "Arrhythmic risk stratification using beat-to-beat variability of repolarization (BVR)". International Congress on Electrocardiology (ICE), Istanbul, Turkey, June 30.
103. "The AV-block canine preparation", British Society for Cardiovascular Research, London, September 24
104. "Enhancing sensitivity and specificity for pro-arrhythmia models" in Cardiac safety Strategies 2007, Hamburg, Germany, October 9
105. "Torsade de Pointes", XIV World Congress on Cardiac Pacing and Electrophysiology, December 5, Rome, Italy.
- 2008**
106. OSU Davis Heart and Lung Research Institute Discovery Series. "Controlling beat-to-beat variability of repolarization is anti-arrhythmic"
- 2009**
107. "Complete prevention of dofetilide induced pro-arrhythmia by flunarizine in anaesthetized chronic AV-block dogs", Department of Physiology, University of Hongkong, February 19, 2009.
108. "Pro-arrhythmic ventricular remodeling", April 4, 2009, Keystone meeting "Common mechanism in arrhythmias and heart failure", Keystone, CO, USA
109. "Drug effects on channel trafficking: mechanism and clinical relevance", Europace, Berlijn, June 22, 2009.
110. "Chronic heart failure and exercise: the autonomic balance". Master Fysiotherapie Wetenschappen. Utrecht 23 September, 2009.
111. "Cardiovascular Safety Pharmacology: sertindole and the future" CRO Notox, Den Bosch, October 5, 2009.
112. "CTMM COHFAR". ICIN lecture, 7 October, 2009.
113. "Beat-to-beat variability of repolarization: clinical perspective", Gottingen – kick off meeting TrigTreat, October 16, 2009
114. "Basic rationale of arrhythmia predictors in CHF", ESC course in Nice "Pharmacologic approach to arrhythmias in heart failure", October 23-24.
- 2010**
115. "UCARE lezing Utrecht", 4 februari 2010.
116. "Activation sequence and pro-arrhythmia", symposium oratie prof dr F. Prinzen, 16 april, Maastricht, the Netherlands
117. "Arrhythmia vulnerability by drugs and myocardial hypertrophy", AHA 2010, Chicago, November
118. "Pacing, altered ventricular activation and arrhythmogenesis. BIT's 2nd Annual International Congress of Cardiology (ICC-2010), December 7-9, Shanghai
- 2011**
119. "Beat-to-beat variability of repolarization: Can it quantify repolarization reserve?" March 3, Pilzen, Tsjech republic.
120. "Biology of QT prolongation", Eur Association for Clinical Pharmacology and Therapeutics, Budapest, June 26, 2011.
121. "Pro-arrhythmic screening of drugs (in development)". Kon Ned Pharmaceutische Studentenvereniging Apeldoorn, 2 juni, 2011

122. Beat-to-beat variability of repolarization: an electrical biomarker for sudden cardiac death and arrhythmias. Key note lecture, October 22, Antwerp, [Annual meeting of Belgian Physiology and Pharmacology Society](#).
- 2012**
123. [Mol Medicne UU](#), Utrecht, January 27: Anti- and pro-arrhythmic effects of drugs (in development).
124. [Hartfunctie laboranten](#) , March 17: Repolarisatie en hartritmestoornissen: een onderschatte combinatie
125. [Szegeed Nobel price meeting](#): Beat-to-beat variability of ventricular repolarization: biomarker to quantify repolarization reserve? Szegeed, March 24
126. Effect of antiarrhythmic drugs on the Purkinje network: electrophysiological and pharmacological aspects. [CardioStim](#), NICE, France June 13-16
127. Screening for Safety Pharmacology, PhD students, [Vienna](#), Austria June 20
128. Electrical remodeling in hypertrophied hearts. [Scandinavian Physiological Society](#), August 26, Helsinki, Finland.
- 2013**
129. "Beat to beat variability of repolarization as a biomarker for pro-arrhythmia in vivo". [Maastricht](#), March 7, 2013.
130. "Repolarization reserve and arrhythmogenesis: quantification and improvement". [GiLead](#), April 16, [Palo Alto](#), USA.
131. "Risk stratification for cardiac arrhythmias: translation from basic mechanisms into clinical practice". IAP - [Brussel](#), 26 April 2013.
132. "Functional read out of genetic findings", AMG symposium 'Genetics of Cardiac Rhythm -from monogenic to population traits, May 21, 2013 [Utrecht](#), the Netherlands.
133. "Repolarization variability: a useful index in ICD decision making?" EHRA, June 25, 2013, [Athens](#), Greece.
134. "Timing of altered anchored cAMP signaling and arrhythmogenesis in a rat model with progression to heart failure". [Nanyang Technological University](#), [Singapore](#), August 27, 2013.
135. The ECG, a historical view: Changing the concept. Opening Lecture at Safety Pharmacology, 16-19 Sept 2013, [Rotterdam](#).
136. "Arrhythmia models to induce and suppress TdP and its quantification". QTest laboratories, [Columbus, Ohio](#), November 22, 2013.
- 2014**
137. "Concept of Beat-to-Beat Variability of Repolarization quantified as Short Term Variability to identify individuals at the highest risk for Sudden Arrhythmic Death". KNAW symposium Translational Research, March 13-14, [Amsterdam](#).
138. "CAVB dog" [San Francisco](#), Heart Rhythm, USA
- 2015**
139. "CAVB dog model: lessons", 21 January, [Melbourne](#)
140. "Triggered arrhythmias identified by beat-to-beat variability of repolarization: a new electrical risk stratifying parameter?". 8 may, [Oslo](#), Norway
141. Post Extra Systolic Potentiation, [EHRA](#), 21 June, [Milan](#), Italy
142. "Mechanism of ischemia induced arrhythmias", AHA, November 10, [Orlando](#)
- 2016**
143. Altered Ventricular Activation and Arrhythmogenesis. Grand Rounds Cardiology, AZM, [Maastricht](#), April 8
144. CAVB dog and arrhythmogenesis: awake and anesthetized. BRC Medtronic, [Maastricht](#), June 3th, 2016
145. Atrial premature beats triggering atrial fibrillation, CardioStim/EHRA 2016, June 10th, [Nice](#), France.
146. Arrhythmogenic mechanisms in Electrical Storm, 11-07-2016, Dept of Astronomy and Physics, University of [Gent](#), Belgium
147. Prevention of ventricular arrhythmias can be guided by STV_{EGM} in the chronic complete (anaesthetized) AV-block dog. Medtronic, [Minneapolis](#), Nov 2.
- 2017**
148. Longerlasting TdP arrhythmias require reentry for its maintenanced in the CAVB dog model. May 8th, 2017, Cardiac Bioelectricity and Arrhythmia Center, Washington University [St Louis](#), USA
- 149.

PREVIOUS ACADEMIC FUNCTIONS MAASTRICHT

1. Member of the Cardiovascular Molecular Core Unit of CARIM (01.01.1996-01.01.1997).
2. Coordinator of Education at Cardiology for the medical students of the Faculty of Medicine (01.09.1993-01.09.1998 and 01.04.2002-01.04.2003), Maastricht University.
3. Coordinator of the Human Tissue Bank, Academic Hospital Maastricht and CARIM (01.01.1996-01.01.2000), and member of the project group “Humaan Materiaal” and “Verantwoord Gebruik (FMWV) to determine legalization and organization of the use of human material.
4. Chairman of the Ph.D. committee of the Faculties of Medicine, Psychology and Health Sciences (01.02.1998-01.02.2001).
5. Member of the Steering Committees for the Department of Instruments of the University of Limburg (01.01.1996-01.01.2003).
6. Chairman (01.09.1999-01.04.2003) and member (01.09.1996) of “Taskforce Electives in Education”, Maastricht University.
7. Principal investigator of Research Division IIC “Electrical Instability” of CARIM (together with Prof. Dr. M.A. Allesie (01.01.1997-01.01.2002) and Chairman of the Research Committee of Cardiology (01.01.1998-01.04.2003).
8. Member of the Steering Committee for the Y-facilities to perform ambulant patient research, CARIM and AZM (01.09.1995-01.04.2003), and of the Central Facility for Experimental Animals (01.04.1999-01.04.2003).

PREVIOUS ACTIVITIES in COMMITTEES

1. Member of the Scientific Advisory Committee of the “Stichting Hartsvrienden” Maastricht (RESCAR), 1998-2003
2. Member of the Steering Committee of the Upjohn/Pharmacia study “A multinational study comparing the safety and efficacy of Ibutilide with dl-sotalol in terminating atrial flutter and fibrillation”, 1996
3. Member of the Safety Committee of the Astra study “H345/52 administered intravenously to patients for conversion of atrial fibrillation to sinus rhythm – a dose finding study”, 2000.