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CARIM Newsletter January 2019

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School for Cardiovascular Diseases

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CARIM newsletter

Contributions for the newsletter (e.g. news of events and grants, important publications, societial impact related topics and research results related to CARIM's research) can be sent to <u>carim-office@maastrichtuniversity.nl</u>. Please submit the text in English and include a short title. The text should be max. 200 words. If applicable, include high resolution pictures and other documents.

If you have a top publication or a translational development worth mentioning, please contact <u>CARIM</u> <u>Office</u>.

HS-BAFTA Talented PhD candidates



The fellowship is meant to support PhD students who want to spend time abroad during their PhD in order to gain experience and improve their chances in

https://mailchi.mp/a0a828d1f1d8/carim-newsletter-january-2019?e=4d3028bd47



receiving a personal grant (i.e. RUBICON; VENI) after their PhD. The fellowship amounts to \in 7,500 based on actual costs of max. \in 1,000 for living allowance per month and travel costs, for a period of max. 6 months. The fellowship can be performed during any period within the PhD trajectory.

The deadline for application is **February 1, 2019**. To apply for admission to the 'HS BAFTA'-programme, the Principal Investigators are invited to submit an

application by email to Tara de Koster, CARIM office (carim-office@maastrichtuniversity.nl).

Click here for more information and the registration form.

CVON RECONNECT Talent program grant for Emma Robinson

Dr Emma Louise Robinson (Dept. of Cardiology) has been awarded a CVON RECONNECT Talent Program grant.

Emma will join this exciting new consortium (CVON2017) and work together with other major Dutch academic medical centers, in particular with teams from Erasmus MC Rotterdam and UMC Utrecht.

Her research will reveal the functional epigenetic changes in the different cell types of the heart and vasculature that underlie the pathophysiology of heart failure with preserved ejection fraction. In addition, she will conduct a multi-center study on a novel candidate gene that shows potential as a biomarker for HFpEF in women in clinical samples.

Her aim is to identify new biomarkers for early diagnosis and targets for effective therapies for this poorly understood and heterogeneous condition, all the while tailoring her research to account for the sex differences in prevalence, disease pathology and response to treatment and environmental triggers.

http://www.cvon-reconnect.nl/



NHS studentbeurzen 2019

Binnen het dr. E. Dekker-programma voor persoonsgebonden beurzen stelt de Nederlandse Hartstichting per universiteit twee studentbeurzen beschikbaar. De beurs bedraagt maximaal € 3.000.

Het doel van deze beurs is om veelbelovende studenten de mogelijkheid te bieden om buiten hun eigen universiteit een onderzoeksstage van minimaal 4 maanden te volgen.

Eén beurs is bestemd voor een student geneeskunde en één beurs voor een student in een andere studierichting, mits duidelijk gerelateerd aan het gebied van hart- en vaatziekten, zoals gezondheid- of klinische psychologie, algemene gezondheidszorg, beleid en management van gezondheidszorg, gezondheidsvoorlichting en - opvoeding,technische wetenschappen, biochemie en statistiek.

Deadline: 11 februari 2019. Klik hier voor meer informatie

Paramount Papers Deficiency of the T cell regulator Casitas B-cell lymphoma-B aggravates atherosclerosis by inducing CD8+ T cell-mediated macrophage death.

The E3-ligase CBL-B (Casitas B-cell lymphoma-B) is an important negative regulator of T cell activation that is also expressed in macrophages. T cells and macrophages mediate atherosclerosis, but their regulation in this disease remains largely unknown; thus, we studied the function of CBL-B in atherogenesis.

The expression of CBL-B in human atherosclerotic plaques was lower in advanced lesions compared with initial lesions and correlated inversely with necrotic core area. Twenty weeks old Cblb-/-Apoe-/- mice showed a significant increase in plaque area in the aortic arch, where initial plaques were present. In the aortic root, a site containing advanced plaques, lesion area rose by 40%, accompanied by a dramatic change in plaque phenotype. Plaques contained fewer macrophages due to increased apoptosis, larger necrotic cores, and more CD8+ T cells. Cblb-/-Apoe-/- macrophages exhibited enhanced migration and increased cytokine production and lipid uptake. Casitas B-cell lymphoma-B deficiency increased CD8+ T cell numbers, which were protected against apoptosis and regulatory T cell-mediated suppression. IFN_Y and granzyme B production was enhanced in Cblb-/-Apoe-/- CD8+ T cells, which provoked macrophage killing. Depletion of CD8+ T cells in Cblb-/-Apoe-/- bone marrow chimeras rescued the phenotype, indicating that CBL-B controls atherosclerosis mainly through its function in CD8+ T cells.

Casitas B-cell lymphoma-B expression in human plaques decreases during the progression of atherosclerosis. As an important regulator of immune responses in experimental atherosclerosis, CBL-B hampers macrophage recruitment and activation during initial atherosclerosis and limits CD8+ T cell activation and CD8+ T cell-mediated macrophage death in advanced atherosclerosis, thereby preventing the progression towards high-risk plaques.

Seijkens TTP, Poels K, Meiler S, van Tiel CM, Kusters PJH, Reiche M, Atzler D, Winkels H, Tjwa M, Poelman H, Slütter B, Kuiper J, Gijbels M, Kuivenhoven JA, Matic LP, Paulsson-Berne G, Hedin U, Hansson GK, Nicolaes GAF, Daemen MJAP, Weber C, Gerdes N, de Winther MPJ, Lutgens E

Eur Heart J. 2018 Nov 17. doi: 10.1093/eurheartj/ehy714. [Epub ahead of print]

Click here for the full article.

Intakes of Vitamin B-12 from Dairy Food, Meat, and Fish and Shellfish Are Independently and Positively Associated with Vitamin B-12 Biomarker Status in Pregnant Dutch Women

The effect of vitamin B-12 from different animal foods on vitamin B-12 biomarker status has not previously been evaluated in pregnant women.

We examined the association of vitamin B-12 intake from dairy, meat, fish (including shellfish), and eggs with circulating concentrations of vitamin B-12 biomarkers and with the presence of vitamin B-12 deficiency in 1266 pregnant women participating in the KOALA Birth Cohort Study.

Blood samples were collected in weeks 34–36 of pregnancy, and vitamin B-12 intake from foods and supplements was estimated with a semiquantitative food-frequency questionnaire (FFQ). Total vitamin B-12, holotranscobalamin (holoTC), and methylmalonic acid (MMA) were determined in plasma. Vitamin B-12 deficiency was defined as holoTC <35 pmol/L and MMA >0.45 µmol/L. Associations were evaluated

with linear and logistic regression analyses, adjusting for potential confounders.

Significant dose-response relations were observed between vitamin B-12 intake from dairy, meat, and fish and plasma vitamin B-12, holoTC, and MMA [P-trend for (shell)fish with MMA = 0.002; P-trend for dairy, meat, and fish with all other markers < 0.001]. The OR (95% CI) of vitamin B-12 deficiency in the third compared with the first tertile of dairy-derived vitamin B-12 was 0.13 (0.04, 0.49), and the ORs for vitamin B-12 from meat and fish were 0.33 (0.11, 0.97) and 0.25 (0.08, 0.82), respectively. Egg-derived vitamin B-12 was only associated with holoTC. Additional analyses showed that self-defined vegetarians and FFQ-defined lacto-ovo-vegetarians had lower median total dietary vitamin B-12 intake and considerably worse vitamin B-12 biomarker status than omnivores and pescatarians.

In pregnant Dutch women, higher intakes of vitamin B-12 from dairy, meat, and fish were positively associated with vitamin B-12 status, suggesting that dairy, meat, and fish are good sources of bioactive vitamin B-12 in pregnancy. Nevertheless, for (lacto-)vegetarians, vitamin B-12 supplementation is recommended.

Karlijn F M Denissen, Sandra G Heil, Simone J P M Eussen, Jim P J Heeskens, Carel Thijs, Monique Mommers, Luc J M Smits, Martien C J M van Dongen, Pieter C Dagnelie

Click here for the full article.

Grant deadlines

NWO Veni - Deadline: January 8, 2019 Click here for more information

ERC Consolidator - Deadline: February 7, 2019 Click here for more information

Dr. E. Dekker Junior Postdoc - Deadline: March 5, 2019 Click <u>here</u> for more information

Dr. E. Dekker Senior Postdoc - Deadline: March 5, 2019 Click here for more information

Dr. E. Dekker Arts in opleiding tot specialist- Deadline: March 5, 2019 Click here for more information

Dr. E. Dekker Junior Staflid - Deadline: March 5, 2019 Click here for more information

EIT Health – Funding opportunity - Deadline: February 15, 2019 Click <u>here</u> for more information

The calendar/overview of the prizes the FHML/UM would like to nominate candidates for is available on: <u>https://researchoffice.mumc.maastrichtuniversity.nl/prize-calendar</u>

CARDIOVASCULAR GRAND ROUNDS

January 18 - Roberto Lorusso, MUMC+ 'Temporary Mechanical Circulatory Support in Cardiogenic Shock'

January 25 - Katja Odening, Universitäts-Herzzentrum Freiburg 'Mechanical dysfunction in "electrical" diseases long- and short-QT syndrome'

Starts at 7.45 am, Academic hospital Maastricht, Meeting room A3-B3, level 3 Breakfast included! Registration not necessary



Symposia & events

GROW TEFAF CollegeTour and Masterclass 'The Scientist and Society' - January 22, 2019 Click here for more information

Maastricht Consensus Conference on Thrombosis - February 13-15, 2019 Click here for more information

Annual Scientific Meeting of The Maastricht Study - March 20, 2019 Click here for more information

29th edition of the Genetics Retreat - March 28 & 29, 2019 Click here for more information

Molecular Mechanisms of Tissue Injury, Repair and Fibrosis - May 23-31, 2019 (Greece) Click <u>here</u> for more information

Agendaladder KNAW 2019

Upcoming CARIM School Council meetings 2019:

- January 24, 13.30-15.30 hours, Co Greepzaal UNS 60
- April 11, 11.00-13.00 hours, Co Greepzaal UNS 60
- June 6, 11.00-13.00 hours, Co Greepzaal UNS 60
- October 10, 11.00-13.00 hours Co Greepzaal UNS 60

Academic events

PhD Conferral Arne van Hunnik, January 10, 12.00 hours Promotor: Prof. U. Schotten Copromotors: Dr S. Verheule; Dr S. Zeemering Title: 'Dynamics of propagation patterns and anti-arrhythmic mechanisms during atrial fibrillation

PhD Conferral Eveline Janssen, January 10, 16.00 hours Promotors: Prof. F.R.J. Verhey; Prof. M.E. de Vugt Copromotor: Dr M.T. Schram Title: 'Depression in the elderly: focus on high risk groups

PhD Conferral Timme van Vuuren, January 11, 12.00 hours Promotor: Prof. C.H.A. Wittens Copromotor: Dr R. de Graaf Title: 'Deep venous obstruction: towards optimizing treatment strategies'

PhD Conferral Cécile Kicken, January 17, 16.00 hours Promotor: Prof. W.F.F.A. Buhre Co-promotors: Dr B. de Laat; Dr M.D. Lancé, Qatar Title: 'Extreme blood coagulation; investigating the influence of physiological extremes on thrombin generation and platelet activation'

Media Moments

Tilman Hackeng (Dept. of Biocemistry)

<u>https://bit.ly/2PbA95U</u> 28/11 De UM en de Universiteit van California-Irvine (UCI) gaan intensief samenwerken op het gebied van biomedische innovaties en research. Marianne van der Steen (MERLN) en Tilman Hackeng (CARIM) lichten de overeenkomst toe in dagblad **De Limburger**.

Stepan Denisov, Ingrid Dijkgraaf, Tilman Hackeng (Dept. of Biochemistry) https://www.c2w.nl/nieuws/seleen-verraadt-eiwitstructuur/item20388

Pieter Dagnelie (Dept. of Internal Medicine)

https://www.ad.nl/wetenschap/vitamine-b12-supplement-belangrijk-voor-vegetariers~a09717af/ https://radar.avrotros.nl/nieuws/item/extra-vitamine-b12-belangrijk-voor-vegetariers/

https://www.metronieuws.nl/lifestyle/lifestyle/fitgezond/2018/12/vitamine-b12-supplement-aangeradenvoor-vegetariers

https://www.welingelichtekringen.nl/samenleving/874812/gebrek-vitamine-b12-met-alleen-melk-en-kaas.html

https://www.derestaurantkrant.nl/onderzoek-melk-en-kaas-zijn-beperkte-bron-van-vitamine-b12 https://www.gezondheidenco.nl/313793/vitamine-b12-supplement-belangrijk-voor-vegetariers/ https://zorgnu.avrotros.nl/nieuws/detail/vitamine-b12-supplementen-nodig-bij-te-weinig-vlees-en-vis/ https://www.bedrock.nl/vitamine-b12-tekort/ https://tpo.nl/2018/12/19/verwacht-je-niet-vegetariers-hebben-vitaminentekort/

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