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## **In vitro and In vivo models for studying endothelial cell development and hereditary hemorrhagic telangiectasia**

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# Stellingen

behorende bij het proefschrift

## ***In vitro* and *in vivo* models for studying endothelial cell development and hereditary hemorrhagic telangiectasia**

1. New gene targeting knock-in fusion strategies are necessary to allow the generation of functional fusion protein mirroring normal protein distribution and non-invasive identification of novel transcriptomic network. (*this thesis, chapter 2 & chapter 3*)
2. The effect of TGF $\beta$  and BMP9 in endothelial cells is highly dependent on the cellular context (*this thesis, chapter 5*)
3. The post-arterial capillary network plays a critical role in the formation of direct AV connections in HHT2 mutants (*this thesis, chapter 6*)
4. The HHA model (Heterozygosity Hemodynamic pro-Angiogenic trigger) is necessary for the development of AVMs in HHT (*this thesis, chapter 6*)
5. The average number of people who read a PhD thesis all the way through is 1.6. and that includes the author (*Nature. 2016 Jul 6;535(7610):7*)
6. In the near future molecular diagnostic next generation sequencing (NGS) panel assays will help elucidate additional genetic aberrations-both primary causative genes and modifiers of phenotype- in HHT patients that have remained elusive for years (*McDonald J et al., Front Genet. 2015 Jan 26; 6:1*)
7. Organs-on-chips are particularly well-suited to the study of biological phenomena that depend on tissue microarchitecture and perfusion, and that involve relatively acute pathophysiological processes (*Bhatia & Ingber, Nat Biotechnol. 2014 Aug; 32(8):760-72*)
8. A number of studies have supported the idea that hemodynamic forces have the capacity to program or redirect the specification of blood vessel type during development (*Swift & Weinstein, Circ Res. 2009 Mar 13;104(5):576-88*)
9. When everything seems black, we have to raise our faith. So, wake us up with a change
10. “To escape destiny is impossible”- (*Pindar, 522-443bc*) ; “Πεπρωμένο, φυγείν αδύνατον”- (*Πίνδαρος, 522-443 πχ*)
11. Thank you, ladies and gentlemen, for your magnificent indifference (*Dizzy Gillespie, 1917-1993*)
12. ...If you can fill the unforgiving minute, With sixty seconds' worth of distance run, Yours is the Earth and everything that's in it... (*-IF- Rudyard Kipling, 1865-1936*)

**Konstantinos Gkatzis**  
22 September 2016