

# CURRICULUM VITAE

## **Nadège GOUIGNARD, Ph.D.**

University of Wisconsin Milwaukee  
Department of Biological Sciences  
3209 N Maryland Ave  
Milwaukee, WI 53211  
T: 424-251-6228  
[gouignar@uwm.edu](mailto:gouignar@uwm.edu)

## EDUCATION

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- 2005** DUT, Biology Engineering. Institut Universitaire de Technologie, La Rochelle, France.  
**2006** B.S., Cellular Biology and Microbiology. Université Rennes 1, France.  
**2008** M.S. Biotechnology, Genetic and Microbiology. Université Droit et Santé de Lille, France  
**2011** Ph.D., Biology, Health, and life Sciences. Université Droit et Santé de Lille, France.

## RESEARCH TRAINING & ACADEMIC APPOINTMENTS

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- 2005** **Research Internship**  
UP des Interactions Moléculaires Flavivirus-Hôtes, Institut Pasteur Paris, France
- 2006** **Research Internship**  
UPRES EA 3892, Laboratoire de Pharmacie Galénique, Biopharmacie et Pharmacie Clinique. Université de Rennes 1, Rennes cedex, France.
- 2007** **Research Internship**  
UMR8576, Unité de Glycobiologie, Structurale et Fonctionnelle, Université Lille 1 France.
- 2010** **Research Internship**  
Institut für Parasitologie, Giessen University, Germany.
- 2007-2011** **Doctoral Candidate**  
Center of Immunity and Infection of Lille, CNRS UMR 8204- INSERM U1019. Pasteur Lille, France.
- 2012-2016** **Postdoctoral Fellow**  
Vertebrate Developmental Biology Department, Lund Stem Cell Center, Lund University, Sweden.
- 2016-2018** **Postdoctoral Fellow**  
Center of Developmental Biology, Université de Toulouse, France
- 2018-2023** **Associate Research Scientist**  
Department of Molecular Pathobiology, New York University, College of Dentistry, New York

## FELLOWSHIPS, AWARDS & HONORS

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### Fellowships

- 2008-2011** Fellowship from the Ministère de l'Education Nationale de la Recherche et Technologies, France.
- 2014-2016** Fellowship of Barncancerfonden (NBCNSPDHEL12/012).
- 2016-2018** Fellowship from Fondation pour la Recherche Médicale (FRM, ARF20150934153)

### Awards & Honors

- 2010** Poster award, Journée André Verbert, Ecole Doctorale, Biologie Santé, Lille, France.
- 2011** AGETIP price for PhD thesis book, Faculté des Sciences Pharmaceutiques et Biologiques. Donated by the AGETIP Company in Lille, France.
- 2015** Travel grant from Swedbo
- 2015** Travel grant from Barncancerfonden (Rb2015-0034)
- 2015** Travel grant from Lund University.
- 2018** Travel grant of Faculty and Staff Development Grant funding, NYU
- 2019** Travel grant of the Mega-Grants Initiative, NYU
- 2019** Poster award, Annual Research Day, College of Dentistry, NYU

## RESEARCH GRANTS

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### Current support

#### **National Institutes of Health- R21 1OD033669-01-A1 (PI, Gougnard)**

“Establishment of Xenopus stem cell lines”

Total cost: \$435000

Period: 04/23-03/25

### Past support

#### **National Institutes of Health- R21 DE029333-01 (PI, Gougnard)**

“Shuttling and function of MMP28 during EMT and collective migration”

Total cost: \$435000

Period: 12/19-11/22 (NCE)

#### **PRESTIGE co-financing grant award (Marie Curie Actions) (PI, Gougnard)**

PRESTIGE-2015-4-0007

“Identifying upstream regulators and downstream effectors of mmp28 during in vivo epithelial-mesenchymal transition and cell migration”

Total cost: 30,000€

Period: 2016-2018

#### **NYU Center of Skeletal and Craniofacial Biology pilot grant (PI, Gougnard)**

NIH 1P30DE020754

“Shuttling and function of MMP28 during EMT and collective migration”

Total cost: \$15,000

Period: 05/19-05/20

## PROFESSIONAL AFFILIATIONS

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**2014-2016** Swedish Developmental Biology Organization  
**2019-present** Society for Developmental Biology  
**2019-present** NYU Center for Skeletal and Craniofacial Biology  
**2019-present** Society for Craniofacial Genetics and Developmental Biology.

## TEACHING RESPONSABILITIES

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**2009-2010** Lecturer in microbiology labs, Université Catholique de Lille, France  
**2012-2016** Teaching Assistant in Cell Biology, Lund University, Sweden  
**2019** Co-instructor in the Developmental Genetics Graduate Program, "Development and Stem Cell Systems"  
**2022-2023** Instructor in the Integrative seminars in oral biology II: Bone biology and craniofacial development

## OTHER ACTIVITIES

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**2022** Annual Departmental Research Symposium. Organizing committee member

## INVITED SEMINARS

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**Center of Skeletal and Craniofacial seminar series**, New York, (US), September 2019  
"Paracrine activation of EMT genes by MMP28"  
**Department of Cell, Developmental, and Integrative Biology**, University of Alabama at Birmingham, November 2020 (virtual)  
"Paracrine activation of Neural crest genes by placodal MMP28"  
**Department of Biological Sciences**, University of Wisconsin Milwaukee, USA, December 2022  
« Non canonical activation of a Epithelial to Mesenchymal Transition program by MMP28 »  
**Department of Head and Neck Surgery**, Weill Cornell Medical College, USA September 2022  
« Developing *Xenopus laevis* to model neural crest pathologies »  
**Department of Biological Sciences**, University of Wisconsin Milwaukee, USA, December 2022  
« Non canonical activation of a Epithelial to Mesenchymal Transition program by MMP28 »

## REVIEWER - JOURNALS:

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Developmental Biology  
Genes  
International Journal of Molecular Sciences  
Molecules

## PUBLICATIONS AND PEER REVIEWS

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### A. Peer-Reviewed Research Articles

1. Ahier A, Rondard P, **Gougnard N**, Khayath N, Huang S, Trolet, J, Donoghue D.J, Gauthier M, Pin J.P, Dissous C. A New Family of Receptor Tyrosine Kinases with a Venus Flytrap Binding Domain

in Insects and Other Invertebrates Activated by Aminoacids. PLoS One. 2009 May 21;4(5):e5651. PMID: 19461966

2. Long T, Vanderstraete M, Cailliau K, Morel M, Lescuyer A, **Gougnard N**, Grevelding CG, Browaey E and Dissous C. SmSak, the Second Polo-like Kinase of the Helminth Parasite *Schistosoma mansoni*: Conserved and Unexpected Roles in Meiosis. PLoS One. 2012;7(6):e40045. Epub 2012 Jun 29. PMID: 2276821
3. Beckmann S, Leutner S, **Gougnard N**, Dissous C, Grevelding CG. Protein Kinases as potential Targets for Novel Anti-Schistosomal Strategies. Special issue: Current strategies for drug development against major human parasites: malaria and schistosomiasis. Curr Pharm Des. 2012;18(24):3579-94. Review. PMID: 22607148
4. **Gougnard N**, Vanderstraete M, Cailliau K, Lescuyer A, Browaey E, Dissous C. *Schistosoma mansoni*: Structural and biochemical characterization of two distinct Venus Kinase Receptors. Exp Parasitol. 2012 Sep;132(1):32-9. Epub 2011 May 15. PMID: 21616067
5. Vanderstraete M, **Gougnard N**, Cailliau K, Morel M, Lancelot J, Bodart JF, Dissous C. Dual targeting of insulin and venus kinase Receptors of *Schistosoma mansoni* for novel anti-schistosome therapy. PLoS Negl Trop Dis. 2013 May 16;7(5):e2226. PMID: 23696913
6. Vanderstraete M, **Gougnard N**, Ahier A, Morel M, Vicogne J, Dissous C. The venus kinase receptor (VKR) family: structure and evolution. BMC Genomics. 2013 May 30;14:361. PMID: 23721482
7. Pera EM, Acosta H, **Gougnard N**, Climent M, Arregi I. Active signals, gradient formation and regional specificity in neural induction. Exp Cell Res. 2014 Feb 1;321(1):25-31. doi: 10.1016/j.yexcr.2013.11.018. Epub 2013 Dec 4. Review. PMID: 24315941
8. **Gougnard N\***, Vanderstraete M\*, Morel M, Cailliau K, Grevelding CG, Leutner S and Dissous C. Venus Kinase Receptors Control Reproduction in the Platyhelminth Parasite *Schistosoma Mansoni*. PLoS Pathog. 2014 May 29;10(5): e1004138. eCollection 2014 May. Erratum in: PLoS Pathog. 2016 Jul;12(7): e1005798. PMID: 24875530 \* Equal contribution.
9. Acosta H\*, Iliev D\*, Grahn HMT\*, **Gougnard N**, Maccarana M, Griesbach J, Herzmann S, Sagha M, Climent M, Pera EM. Protease Nexin-1 is a negative feedback regulator of FGF signaling during germ layer and primary axis formation in the *Xenopus* embryo. Development. 2015 Mar 15;142(6):1146-58. PMID: 25758225 \* Equal contribution.
10. **Gougnard N**, Maccarana M, Strate I, von Stedingk K, Malmström A, Pera EM. Musculocontractural Ehlers-Danlos syndrome and neurocristopathies: dermatan sulfate is required for *Xenopus* neural crest cells to migrate and adhere to fibronectin. Dis Model Mech. 2016 Jun 1;9(6):607-20. Epub 2016 Apr 21. PMID: 27101845
11. Arregi I, Climent M, Iliev D, Strasser J, **Gougnard N**, Johansson JK, Singh T, Mazur M, Semb H, Artner I, Minichiello L, Pera EM. Retinol dehydrogenase-10 regulates pancreas organogenesis and endocrine cell differentiation via paracrine retinoic acid signaling. Endocrinology. 2016 Dec;157(12):4615-4631. Epub 2016 Oct 14. PMID: 27740873
12. Pera EM, **Gougnard N**, Maccarana M. Aberrant neural crest development causes craniofacial and other malformations in an animal model of Musculocontractural Ehlers-Danlos syndrome. J Rare Dis Res Treat 1(3): 74-77 .

13. **Gougnard N**, Schön T, Holmgren C, Strate I, Taşöz E, Wetzel F, Maccarana M, Pera EM. Gene expression of the two developmentally regulated dermatan sulfate epimerases in the *Xenopus* embryo. *PLoS One*. 2018 Jan 25;13(1):e0191751. PMID: 29370293.
14. **Gougnard N**, Andrieu C, Theveneau E. Neural crest delamination and migration: Looking forward to the next 150 years. *Genesis*. 2018 Jun;56(6-7):e23107. Review. PMID: 29675839
15. Bajanca F, **Gougnard N**, Colle C, Parsons M, Mayor R, Theveneau E. In vivo topology converts competition for cell-matrix adhesion into directional migration. *Nat Commun*. 2019 Apr 3;10(1):1518. doi: 10.1038/s41467-019-09548-5. PMID: 30944331
16. **Gougnard N**, Cherrier F, Brito-Fravallo E, Pain A, Zmarlak N.M, Genève C, Vernick K.D, Dissous C, Mitri C and Cailliau K. Dual role of the *Anopheles coluzzii* Venus Kinase Receptor in both larval growth and immunity. *Sci Rep*. 2019 Mar 5;9(1):3615. doi: 10.1038/s41598-019-40407-x. PMID: 30837655.
17. **Gougnard N**, Theveneau E, Saint-Jeannet JP. Dynamic expression of MMP28 during cranial morphogenesis. *Philos Trans R Soc Lond B Biol Sci*. 2020 ;375(1809):20190559. doi:10.1098/rstb.2019.0559
18. **Gougnard N**, Rouvière C, Theveneau E. Using *Xenopus* Neural Crest Explants to Study Epithelial-Mesenchymal Transition. *Methods Mol Biol*. 2021;2179:257-274. doi: 10.1007/978-1-0716-0779-4\_20. PMID: 3293972
19. Maccarana M, Tykesson E, Pera EM, **Gougnard N**, Fang J, Malmström A, Ghiselli G, Li JP. Inhibition of iduronic acid biosynthesis by ebselen reduces GAG accumulation in MPS-I fibroblasts. *Glycobiology*. 2021 Jun 29:cwab066. doi: 10.1093/glycob/cwab066. PMID: 34192316
20. **Gougnard N**, Bibonne A, Mata JF, Bajanca F, Berki B, Barriga EH, Saint-jeannet JP, Theveneau E. "Paracrine regulation of neural crest EMT by placodal MMP28." *PLoS Biol*. 2023 Aug 17;21(8):e3002261. doi: 10.1371/journal.pbio.3002261.

## **B. Book chapters**

1. Dissous C, Vanderstraete M, Beckmann S, **Gougnard N**, Leutner S and Grevelding CG. Tyrosine kinase signalling and drug targeting in schistosomes. in *Protein Phosphorylation in Parasites Novel Targets for Antiparasitic Intervention* (eds C. Doerig, G. Späth and M. Wiese), Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim, Germany.
2. Pera EM, Acosta H, **Gougnard N**, Climent M. Whole-mount in situ hybridization and immunohistochemistry in *Xenopus* embryos. In: Giselbert Hauptmann (ed.) *In Situ Hybridization Methods, Neuromethods*, vol. 99, Springer Science + Business Media New York, pp. 151-167. 2015.