

## CURRICULUM VITAE

### Dr. Samuel Schmidt (Ph.D.)

Kavli Institute at Cornell for Nanoscale Science and Department of Chemical and Biomolecular Engineering, Cornell University, Ithaca, NY, USA  
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### EDUCATION

**KIC Fellow Postdoctoral Associate** (as of 2018), Kavli Institute at Cornell for Nanoscale Science, Department of Chemical and Biomolecular Engineering, Cornell University, Ithaca, NY, USA

**Roche Fellow Postdoctoral Associate** (2013-2018), Radboud University Medical Center, Nijmegen, The Netherlands and F. Hoffmann-La Roche Ltd, Basel, Switzerland

**Ph.D.**, Glyco-Cellbiology (2017), Radboud University Medical Center, Nijmegen, The Netherlands

**M.Sc.**, Medical Biochemistry (2007), University Leipzig, Saxony, Germany

### PROFESSIONAL EXPERIENCE

**Roche Fellow Postdoctoral Associate** (2013-2018), Department of Biochemistry, Biochemistry of Integrated Systems (BIS), Radboud University Medical Center, Nijmegen, The Netherlands

### HONORS AND AWARDS

2018 Google Summer of Code (GSC), 2 projects in the category "R projects for statistical computing", (1) "Firedata - Implementing Web Functionalities for Shiny and OpenCPU", (2) "Firedata - Enabling Easy Cloud Stats through Cloud Firestore" (together with Kohze, R.), <http://bit.ly/2vLnUZq>, <http://bit.ly/2HunR5y>

2017 Google Summer of Code (GSC), Web-App: Firedata: "Connecting R to Google Firebase" (together with Kohze, R.), <http://bit.ly/2uMehYB>

2017 KIC Postdoctoral Fellowship, Kavli Institute at Cornell for Nanoscale Science, Cornell University, Ithaca, NY, USA, <http://bit.ly/2gTqaGv>

2016 Google Summer of Code (GSC), Web-App: Discover: "Streamlining Statistical Data Analysis" (together with Kohze, R.), <http://bit.ly/2uLGVZU>

2014 Radboud University Internationalization Travel Grant, Conference on Matrix Biology

2013 RPF Fellowship, F. Hoffmann-La Roche Ltd, Basel, Switzerland

2010 NCDG Researcher of the Month, Nijmegen Center for Disorders of Glycosylation

### PUBLICATIONS

1. **Schmidt, S.**, and Friedl, P. (2010) Interstitial cell migration: integrin-dependent and alternative adhesion mechanisms, *Cell Tissue Res* 339, 83-92.
2. Dommerholt, J.\*, **Schmidt, S.\***, Temming, R., Hendriks, L. J. A., Rutjes, F. P. J. T., van Hest, J. C. M., Lefeber, D. J., Friedl, P., and van Delft, F. L. (2010) Readily Accessible Bicyclononynes for Bioorthogonal Labeling and Three-Dimensional Imaging of Living Cells, *Angew. Chem Int Ed* 49, 9422-9425. (\*shared 1<sup>st</sup> authors) **Cited 361 times and highlighted in:**

- a. Faculty of 1000 Evaluations: <http://f1000.com/prime/6000958>
  - b. Peter Göltz, Deputy Editors: Neville Compton, Haymo Ross, "Hot Paper", *Angewandte Chemie International Edition* (2010)
  - c. "News", *Faculty of Science*, Nov. 10. (2010)
  - d. Founded company: Synaffix (<http://www.synaffix.com>)
3. **Schmidt, S.**, Adjobo-Hermans, M. J., Wallbrecher, R., Verdurmen, W. P., Bovee-Geurts, P. H., van Oostrum, J., Milletti, F., Enderle, T., and Brock, R. (2015) Detecting Cytosolic Peptide Delivery with the GFP Complementation Assay in the Low Micromolar Range, *Angew Chem Int Ed*
  4. **Schmidt, S.**, Wallbrecher, R., van Kuppevelt, T. H., and Brock, R. (2015) Methods to Study the Role of the Glycocalyx in the Uptake of Cell-Penetrating Peptides, *Methods Mol Biol* 1324, 123-131.
  5. **Schmidt, S.**, Adjobo-Hermans, M.J.W., Kohze, R., Enderle, T., Brock, R., Milletti, F. Identification of short hydrophobic CPPs for cytosolic peptide delivery by rational design, *Bioconj Chemistry* (2016)
  6. Mohamed, M., Ashikov, A., Guillard, M., Robben, J. H., **Schmidt, S.**, van den Heuvel, B., de Brouwer, A. P., Gerardy-Schahn, R., Deen, P. M., Wevers, R. A., Lefeber, D. J., and Morava, E. (2013) Intellectual disability and bleeding diathesis due to deficient CMP-sialic acid transport, *Neurology*.
  7. Verdurmen, W. P., Wallbrecher, R., **Schmidt, S.**, Eilander, J., Bovee-Geurts, P., Fanghanel, S., Burck, J., Wadhwani, P., Ulrich, A. S., and Brock, R. (2013) Cell surface clustering of heparan sulfate proteoglycans by amphipathic cell-penetrating peptides does not contribute to uptake, *Journal of controlled release: Official Journal of the Controlled Release Society*.
  8. Wallbrecher, R., Verdurmen, W. P., **Schmidt, S.**, Bovee-Geurts, P. H., Broecker, F., Reinhardt, A., van Kuppevelt, T. H., Seeberger, P. H., and Brock, R. (2013) The stoichiometry of peptide-heparan sulfate binding as a determinant of uptake efficiency of cell-penetrating peptides, *Cell Mol Life Sci*.
  9. Vallen, M. J., **Schmidt, S.**, Oosterhof, A., Bulten, J., Massuger, L. F., and van Kuppevelt, T. H. (2014) Primary ovarian carcinomas and abdominal metastasis contain 4,6-disulfated chondroitin sulfate rich regions, which provide adhesive properties to tumour cells, *PLoS One* 9, e111806.
  10. Favretto, M. E., Wallbrecher, R., **Schmidt, S.**, van de Putte, R., and Brock, R. (2014) Glycosaminoglycans in the cellular uptake of drug delivery vectors - Bystanders or active players?, *Journal of controlled release : official journal of the Controlled Release Society*.
  11. Klein, M.J., **Schmidt, S.**, Wadhwani, P., Bürck, J., Reichert, J., Afonin, S., Berditsch, M., Schober, T., Brock, R., Kansy, M. and Ulrich, A.S. (2017) Lactam-Stapled Cell-Penetrating Peptides: Cell Uptake and Membrane Binding Properties, *Journal of Medicinal Chemistry*. *J. Med. Chem.* 2017, 60, 8071–8082

#### **LAST AUTHOR PUBLICATION**

12. Kohze, R., Dieteren, C., Koopman, W.J., Brock, R., **Schmidt, S.**, (2017) Frapbot: an open-source application for fluorescence recovery after photobleaching data. *Cytometry A*.

### **PUBLICATIONS (SUBMITTED)**

13. **Schmidt, S.**, Weigelin, B., te Riet, J., Daryab, N., te-Lindert, M., Lelli, B., Rognoni, L., Krause-Vortmeyer, M., Gottschalk, K.E., Kissler, S., Fransen, J., Humphries, M.J., Friedl, P., Glycocalyx-mediated Cell Adhesion and Migration, Cell

### **PUBLICATIONS (IN PREPARATION)**

14. **Schmidt, S.**, Friedl, P., Quantitative removal of multiple glycan species from live cells.
15. Zuconelli, C., **Schmidt, S.**, Adjobo-Hermans, Manipulation of Orai1 by cationic peptides mediates their direct cytosolic uptake.
16. **Schmidt, S.**, Kohze, R., Brock, R., Endocytic uptake of L- but not D-amino acid cationic cell-penetrating peptides induces a softening of the actin cytoskeleton.
17. Kohze, R., **Schmidt, S.**, Brock, R., A conceptional structural understanding of the interaction of arginine-rich cell-penetrating peptides with glycosaminoglycans.

### **INVITED SEMINARS**

1. **Schmidt S.**, "Mechanisms of integrin-independent amoeboid modes of cell migration - role of glycocalyx and physical mechanisms." 38<sup>th</sup> Annual Scientific Meeting of the Matrix Biology Society of Australia and New Zealand, Queenscliff, Australia (2014)
2. **Schmidt S.**, "Glycocalyx-mediated Integrin-independent amoeboid cell migration" Gordon Research Conference / Seminar for Glycobiology, Lucca (Barga), Italy (2014)
3. **Schmidt S.**, "Bioorganic Chemistry 2.0 – Presenting new toolboxes for Biology" Technical Forum Evening, Radboudumc, Nijmegen, The Netherlands (2014)
4. **Schmidt S.**, "GFP complementation to detect cytosolic delivery." 6<sup>th</sup> RPF Symposium, Copenhagen, Denmark (2015)
5. **Schmidt S.** & Kohze R., "Frapbot – A new open source FRAP application", Courses and Workshops, Radboudumc, Nijmegen, The Netherlands (2016)
6. **Schmidt S.**, "Impact of Cell Surface Glycosylation on Tumor Cell Migration: The glycocalyx as multivalent and universal adhesion scaffold.", Kavli Institute at Cornell for Nanoscale Science, Ithaca, USA (2017)

### **TEACHING ACTIVITIES**

1. Radboudumc, RIMLS Molecular Mechanisms of Disease Masterclass, Moleculaire Levenswetenschappen (MLW) and Hogeschool van Arnhem en Nijmegen (HAN), **Practical Mentor**, "Microscopic Imaging" (2008 – 2018)
2. Moleculaire Levenswetenschappen (MLW), **Project Supervisor** (2015 – 2017)
3. Biomedische Wetenschappen (BW), **Project Supervisor** (2013 – 2014)
4. Hogeschool van Arnhem en Nijmegen (HAN), **Project Supervisor** (2010-2012)
5. Institute for Molecules and Materials, Synthetic Organic Chemistry, **Project Supervisor** (2009-2010)

## **SERVICE – UNIVERSITY**

6. Radboudumc, RIMLS Molecular Mechanisms of Disease Masterclass, **Mentor** (2012)
7. Radboudumc, **Technical Forum Advisor** (2010)

## **SERVICE - MANUSCRIPT REVIEW**

8. Journal of Cell Science, Current Medicinal Chemistry

## **ACTIVITIES**

- Vaionex Corporation – Datascience and biotech startup ([Vaionex](#)), **Co-founder** (2016 – Present)
- R codes – Marketplace for R tutorials and software solutions ([R.codes](#)), **Co-founder** (2016 – Present)
- Respora – Social Network, Increase the communication between Scientists within the Institute, Beta-Phase ([Respora](#)), **Co-founder** (2016 – 2018)
- **Electronic Musician** – Sounddesign, Electronic music production (Myspace: <http://bit.ly/1Qm1cZF>, Soundcloud: <http://bit.ly/1oHUrXs>) (2003 – Present); NoZoo (Youtube: <http://bit.ly/2r1YFfl>, The Music Site: <http://bit.ly/2FjfyHK>, Spotify: <http://bit.ly/NozooHittaVarandra>, Soundcloud: <http://bit.ly/2r2En6s>), **Band member** (2018 – Present)
- International Youth Symphony Partner Orchestra Germany – **Greece, Mentor:** Woodwind register (2002)
- Conservatorium Georg-Philipp-Telemann – **Bachelor of Arts (BA)**, Advanced studies: Flauto traverso (1<sup>st</sup> instrument), music history, music notation, Youth symphony orchestra (1999 – 2003)