

## University of Groningen

### Sensors@Work

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# About the author



Charissa Roossien was born on August 27, 1988 and raised in Assen, the Netherlands. She holds a BEng in Mechanical Engineering and a MSc in BioMedical Engineering. In her Bachelor she did a dual internship as mechanical engineer at Pezy Product Innovation and an extra project as engineer teacher at special primary education s.b.o. de Meander. For her bachelor thesis about the development and integration of a hands-free tracheostoma valve she was awarded as best graduation thesis and won the 'OKE' price of the entrepreneurial circle of Emmen, the Netherlands. In 2010 she graduated as 'Top' (high potential) of Stenden University of Applied Sciences.

To achieve more knowledge about engineering in the medical field, she continued with the pre-master Life Science and Technology in 2010 for which she did a research about oxygen release of biomaterials for regeneration of large tissue defects and continued with the master BioMedical Engineering at the University of Groningen with minor prosthesis and implant interface technology. In 2013 she graduated with her master thesis about the optimization of a new elliptical driving mechanism for manual wheelchairs.

After her studies, Charissa started as pre-doctoral researcher at INCAS<sup>3</sup>, and continued by a collaborating PhD at INCAS<sup>3</sup> and University Medical Center of Groningen (UMCG) about sensor technologies for sustainable employability. Halfway her PhD she combined her PhD-study with a position as lecturer and was involved in educational activities including courses about biomechanics, biomedical product design and prosthetics and orthotics and supervision of bachelor and master students from various studies and universities. During her PhD, Charissa participated in the SPRINT PhD committee. In 2018 she won the Best Poster Award at the Scientific Meeting of the Groningen Engineering Center. She did two research studies aboard at Karde AS in Oslo, Norway and Ageing lab in Jaén, Spain to investigate user involvement in the design process, intelligent data analysis, reminding technologies and self-management solutions in healthcare.

Since the start of her bachelor in Mechanical Engineering, Charissa is active in informing girls about the interesting possibilities of a technical education aiming to motivate more girls and women in IT, technology and beta science. Since 2008 she is a so-called 'role model'

for VHTO, national expertise agency for girls/women and beta/technology in the form of speed dates, guest lectures and organizing or participating in the yearly 'Girlsday' initiated by VHTO.

Charissa her motivation is to help people with useful developments. She will continue her work at the UMCG and University of Groningen in a post-doctoral career focusing on engineering and applied research and science.

*Disclaimer: photo by Deborah Roffel photography*

## Contribution to journals

- C.C. Roossien, L.A. Kroops, J.B. Wempe, G.J. Verkerke, M.F. Reneman, "Can we analyze breathing gasses without a mouth mask? Proof-of-concept and concurrent validity of a newly developed breathing gasses analyzing headset". *Applied Ergonomics*, vol. 90, pp. 103266, 2021.
- Gareb, B., Roossien, C.C., van Bakelen, N.B., Verkerke, G.J., Vissink, A., Bos, R.R.M., van Minnen, B., Comparison of the mechanical properties of biodegradable and titanium osteosynthesis systems used in oral and maxillofacial surgery. *Scientific Reports*, 2020, 101 18143.
- Roossien, C.C., Heus, R., Reneman, M.F., Verkerke, G.J., Monitoring core temperature of firefighters to validate a wearable non-invasive core thermometer in different types of protective clothing: concurrent in-vivo validation. *Applied Ergonomics*, 2020, 83, 103001.
- Roossien, C.C., Reneman, M.F., Verkerke, G.J., Werkbelasting meten met sensortechnologie. *Fysiopraxis*, 2018, 3, 18-20.
- Roossien, C.C., Stegenga, J., Hodselmans, A.P., Spook, S.M., Koolhaas, W., Brouwer, S., Verkerke, G.J., Reneman, M.F., Can a smart chair improve the sitting behavior of office workers? *Applied Ergonomics*, 2017, 65,335-361.

## Conference contributions

- Roossien, C.C., Verkerke, G.J., Reneman, M.F., Development and testing new technology to measure physical workload. (Oral presentation) *4th International FCE Research Conference*, 2018, Valens, Switzerland.
- Roossien, C.C., Reneman, M.F., Verkerke, G.J., Stegenga, J., Wörtche, H.J., SPRINT@Work: Sustainable employment of older workers. (Poster presentation) *Scientific Meeting of Groningen Engineering Center*, 2018, Groningen, the Netherlands.
- Roossien, C.C., Reneman, M.F., Verkerke, G.J., SPRINT@Work: Monitoring physical workload. (Poster presentation) *KIVI Dag van de Ingenieur*, 2018, Groningen, the Netherlands.
- Roossien, C.C., Reneman, M.F., Verkerke, G.J., Tools voor fysiek zwaar werk. (Oral presentation) *SPRINT symposium*, 2018, Enschede, the Netherlands.
- Roossien, C.C., Baten, C.T.M., Stegenga, J., Reneman, M.F., Verkerke, G.J., Monitoring working posture and back load with IMU's. (Poster presentation) *6<sup>th</sup> Dutch Bio-Medical Engineering Conference*, 2017, Egmond aan Zee, the Netherlands. Published in Book of Abstracts of the 6<sup>th</sup> Bio-Medical Engineering Conference, 2017, 52.
- Roossien, C.C., Baten, C.T.M., Stegenga, J., Verkerke, G.J., Reneman, M.F., Monitoring sitting behavior with a smart sensor chair. (Poster presentation) *6<sup>th</sup> Dutch Bio-Medical Engineering Conference*, 2017, Egmond aan Zee, the

Netherlands. Published in Book of Abstracts of the 6<sup>th</sup> Bio-Medical Engineering Conference, 2017, 70.

- Roossien, C.C., Verkerke, G.J., Reneman, M.F., SPRINT@Work; monitoren van fysieke werkbelasting. (Oral presentation) *Dag van de Fysiotherapie*, 2017, Amersfoort, the Netherlands.
- Roossien, C.C., Reneman, M.F., Verkerke, G.J., Duurzame inzetbaarheid werknemers. (Oral presentation), *SPRINT symposium*, 2017, Groningen, the Netherlands.
- Roossien, C.C., Baten, C.T.M., Stegenga, J., Reneman, M.F., Verkerke, G.J., Monitoring working posture and back load with IMU's. (Oral presentation) *ESEM webinar*, 2016, online.
- Roossien, C.C., Reneman, M.F., Verkerke, G.J., Stegenga, J., Wörtche, H.J., SPRINT@Work: Monitoring physical workload. (Poster presentation) *SPRINT symposium*, 2016, Enschede, the Netherlands.
- Roossien, C.C., Reneman, M.F., Verkerke, G.J., Stegenga, J., Wörtche, H.J., SPRINT@Work: Sustainable employment of older workers. (Poster presentation) *5<sup>th</sup> Dutch Bio-Medical Engineering Conference*, 2015, Egmond aan Zee, the Netherlands. Published in Book of Abstracts of the 5<sup>th</sup> Bio-Medical Engineering Conference, 2015, 113-114.

### Honors and awards

- GEC Poster prize (best poster), *Groningen Engineering Center*, Groningen, the Netherlands.
- "Startpositie Stenden: In techniek kun je je creativiteit kwijt". (Press contact) *Dagblad van het Noorden*, edition Emmen, 12 December 2013, 9. And "Startpositie Stenden" by drs. Willem Bakker, ISBN:9789491589188, 22-23.
- "eMMbassadeur" (Ambassador of municipality of Emmen), *Municipality of Emmen*, 2011, the Netherlands.
- "Rapportage Atlanta Gala – uitreiking ondernemersprijzen". (Press contact) *Dagblad van het Noorden* (Dutch newspaper) edition ZuidOost Drenthe, 9 Februari 2011, 29.
- "OKE" prize winner. (Best bachelor thesis) *Entrepreneurial circle of Emmen*, 2010, Emmen, the Netherlands.
- "Studente Charissa Roossien" and "Charissa Roossien wint scriptieprijs". (Press contact) *Dagblad van het Noorden*, edition Drenthe, 10 September 2010, 9.
- "Topper of Stenden". (High potential), Stenden University of Applied Sciences, 2010, Emmen, the Netherlands.
- "Employees of the future". (Interview) *Zakenspiegel*, edition Generation Einstein in the Starting Blocks, 2012, 20-21.





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