

Julia Kathrin Baumgart

Curriculum vitae

Vollabakken 5B
7030 Trondheim, Norway
+4748436206 | julia.k.baumgart@ntnu.no
Born: May 7th 1988



CURRENT POSITION

Dr. Julia Kathrin Baumgart is currently employed as project coordinator of and researcher in the Para-Group at the Centre for Elite Sports Research (SenTIF), Department of Neuromedicine and Movement Science, Norwegian University of Science and Technology (NTNU). In addition, she is coordinating the activities of the Clinical-Academic Group (CAG) "ENABLE", which works in the area of physical activity and disability at the Department of Neuromedicine and Movement Science, NTNU.

RESEARCH STATEMENT

Julia Kathrin Baumgart's main research focus is on understanding how different physical disabilities affect physiological and biomechanical responses both during testing in the indoor laboratory as well as during training, competitions and daily life activities.

OVERVIEW OF PREVIOUS WORK

Julia Kathrin Baumgart has published 10 peer-reviewed studies (another 5 are submitted) in scientific journals as well as 2 book chapters, 7 scientific conference proceedings and a number of oral and poster presentations at national and international conferences. She has worked as a scientist within the field of Paralympic research and with some of Norway's most medal winning Paralympic athletes over the last 6 years. She is involved in the supervision of a Ph.D. student and has been involved in supervising 20+ B.Sc. and M.Sc. students.

PREVIOUS WORK EXPERIENCE

- Project coordinator CAG ENABLE (20%), Project coordinator/Researcher Paralympic Research (80%), Department of Neuromedicine and Movement Sciences, NTNU, 2019 - now
- Post Doc (100%), Department of Neuromedicine and Movement Sciences, NTNU, 2018 – 2019
- Ph.d. candidate (100%), Department of Neuromedicine and Movement Sciences, NTNU 2015 – 2018
- Research Assistant (100%), Department of Neuroscience, NTNU 2014 – 2015
- Physical therapist in a private practice in Eindhoven, The Netherlands, 2013 (mostly elderly patients)
- Physical therapist in a Christian Medical Centre in Dodoma, Tanzania, 2012 – 2013 (mostly children with cerebral palsy and other disabilities)
- Physical therapist in two private practices in Maastricht, the Netherlands, 2012 (mostly elderly patients)

EDUCATION

Studies

- Ph.D. in Health Sciences, Department of Neuromedicine and Movement Science, Norwegian University of Science and Technology (NTNU), Norway, 2015 – 2018
- M.Sc. in Biology of Human Performance and Health, Department of Human Movement Sciences, Maastricht University, The Netherlands, 2013 – 2014
- B.Sc. in Physical Therapy, Fontys University of Applied Sciences, Eindhoven, The Netherlands, 2008 – 2012

Courses

- Digital presentation techniques, half-day seminar, NTNU, 2020
- Data handling, half-day seminar, NTNU, 2020
- Research leadership, 3-day course, NTNU, 2020
- Phd supervisor course, 3-day course, NTNU, 2019
- Team-based learning, 1-day course, NTNU, 2019

- International ice sledge hockey classifier course, 3-day course, International Paralympic Committee (IPC), 2015
- Introduction to Para Sport (Online Course), IPC, 2015
- Good clinical practice, 1-day course, NTNU, 2015

SUPERVISION AND TEACHING

Supervision

- Ph.d.-student (1 on-going)
- Research assistant (1 finished)
- Master Students (18 finished, 2 on-going)
- Bachelor Students (2 finished)

Teaching

Master level

- Guest lecturer in the course “Exercise in Medicine” of the Master study Physical activity and Health, NTNU (from 2020 – now)
- Guest lecturer in the course “Advanced Exercise Physiology” of the Master study Performance Optimization with a Focus on Elite Sport at Mid-Sweden University (from 2020 – now)
- Guest lecturer during the yearly career event of the Master study Human Movement Sciences at Maastricht University, The Netherlands (from 2020 – now)

Bachelor level

- Guest lecturer in the course “Physical activity and rehabilitation” of the Bachelor study Human Movement Science, NTNU (from 2020 – now)
- Guest lecturer in the course “Training and Performance” of the Bachelor study Human Movement Science, NTNU (from 2015 – now)

Others

- Responsible for dissemination of relevant research in the 1.5-year educational program “Para coach academy” at Olympiatoppen (2020 – now)
- Guest lecturer during the educational program “Para coach academy” at Mid-Sweden University (2020 – now)

- Internal lecture for medical doctors at St.Olavs university Hospital in Trondheim on “I am a wheelchair user. How should I train?” (with joined video call to the hospitals in Ålesund, Levanger Valnesfjord and Haugelandsenteret) (2018)

GRANT APPLICATIONS

Part of the core team of writing the following grant applications:

- “The virtual training centre for people with physical disabilities” to NFR, 2021 (16.000.000 NOK, ongoing)
- “INTRO: INclusion through educational Training in Outdoor sports” to Erasmus +, 2021 (400.000 Euro/ ~4.200.000 NOK, not granted in 2020, ongoing re-application)
- “The digital wheelchair: individual empowerment for a more active society”, 2019 – now:
 - NTNU Discovery pre-project (for 200.000 NOK, granted)
 - NTNU Innovasjonsstipend (for 500.000 NOK, granted)
 - Samarbeidsorganet (for 4.068.000 NOK, not granted)
 - Stiftelsen Dam (for ~3.400.000 NOK, ongoing)
 - NTNU Phd-positions for enabling technologies (for ~3.400.000 NOK, ongoing)
- Clinical-academic group “Physical activity and disability” to INB, NTNU, 2019 (500.000 NOK, granted)
- “Development of test concepts and determinants of performance in Paralympic sitting sports” to FoU at the Olympic Centre of Norway, 2015 (for 600.000 NOK, granted)
- “Utvikling av idrett for funksjonshemmede i Trondheim” to Extrastiftelsen, 2014 (for 700.000 NOK, not granted)
- “Athletes with a disability – increasing training knowledge and support” to Gjensidige stiftelsen, 2014 (for 450.000 NOK, not granted)

COLLABORATIONS

- The Norwegian Top Sport Centre (Olympiatoppen), non-governmental organization, Norway: Implementation of Paralympic research in Practice
- Norwegian School of Sport Sciences, Norway: Paralympic Research
- Loughborough University, The United Kingdom: Paralympic Research
- VI Stiftelsen: Clinical-Academic Group, DigiW project

- Clinical for physical medicine and rehabilitation, St. Olavs Hospital: Clinical-Academic Group, DigiW project
- Sunnaas Hospital and Sunnaas Foundation: Clinical-Academic Group, DigiW project
- Beitostølen Healthsports Centre: Clinical-Academic Group, DigiW project

FELLOWSHIPS, AWARDS AND PRICES

- Innovation scholarship for a one-year 50% position, NTNU, Norway

MOBILITY

- Research stay at Loughborough University November – December 2019
- See positions as physical therapist in The Netherlands and Tanzania above

LANGUAGES

Mother tongue	German
Other languages	<p>English (fluent, very good knowledge; acquired during high school, grade 5 to 11, stay in the US and Bachelor, Master and PhD studies in English)</p> <p>Norwegian (fluent, very good knowledge; acquired during online language course and living in Norway)</p> <p>Dutch (fluent, very good knowledge; acquired during a language course, living in the Netherlands)</p> <p>Swahili (good knowledge; self-study and stay in Tanzania, intensive course summer 2018)</p> <p>French (basic knowledge; acquired during high school, grade 9 to 13)</p> <p>Latin (basic knowledge; acquired during high school, grade 7 to 11)</p>

OTHER QUALIFICATIONS / MEMBERSHIPS

- Evaluation Committee member of research assistant, PhD and senior research position in the Para research group at the Centre for Elite Sports Research
- Member of the reference group at SenTIF (from 2017 – now)
- Member of the organizing board of the International Conference of Science in Skiing (from 2020 – now)
- Member of the para climbing project group at the Norwegian climbing federation (2019-2020)
- Team captain of the Trøndelag sitting volleyball team (2017-2019)
- International ice sledage hockey classifier with the IPC (2015-2019)

SCIENTIFIC PUBLICATIONS

1. Bentzen, Marte; Brurok, Berit; Roeleveld, Karin; Hoff, Mari; Jahnsen, Reidun; Wouda, Matthijs Ferdinand; **Baumgart, Julia Kathrin**. Changes in physical activity and basic psychological needs relate to mental health among people with physical disability during the Covid-19 pandemic in Norway. *Disability and Health 2021* (will be submitted 11.1.2021)
2. Blaauw, Eline; Severin, Anna Cecilia; Mulder, Roy; **Baumgart, Julia Kathrin**. How changes to the number of sport events and classes have affected the number of medal events during the Paralympic Games: a historical overview. *International Review for the Sociology of Sports 2020* (submitted)
3. Severin, Anna Cecilia; Danielsen, Jørgen; Falck Erichsen, Jørgen; Wold Eikevåg, Sindre; Steinert, Martin; Ettema, Gertjan; **Baumgart, Julia Kathrin**. Adjusting seat and backrest angles improves performance in an elite Paralympic Rower: a case study. *Frontiers in Sports and Active Living 2020* (accepted, ahead of print)
4. **Baumgart, Julia Kathrin**; Tønnessen, Espen; Eklund, Morten; Sandbakk, Øyvind. Training distribution during a Paralympic cycle for a multiple swimming champion with paraplegia: a case report *International Journal of Sports Physiology and Performance 2020* (in revision)
5. Høivik Carlsen, Camilla; McGhie, David; **Baumgart, Julia Kathrin**; Sandbakk Øyvind. Comparison of physiological and biomechanical responses to flat and uphill cross-country sit-skiing in able-bodied athletes. *International Journal of Sports Physiology and Performance 2020* (accepted, ahead of print)
6. **Baumgart, Julia Kathrin**; Brurok, Berit; Sandbakk, Øyvind. Comparison of Peak Oxygen Uptake Between Upper-Body Exercise Modes: A Systematic Literature Review and Meta-Analysis. *Frontiers in Physiology 2020*; Volume 412 (11)
7. **Baumgart, Julia Kathrin**; Haugnes, Pål; Bardal, Lars Morten; Østerås, Sindre; Kocbach, Jan; Sandbakk, Øyvind. Development of a Framework for the Investigation of Speed, Power and Kinematic Patterns in Para Cross-Country Sit-Skiing: A Case Study of an LW12 Athlete. *Frontiers in Sports and Active Living 2019*; Volume 1.
8. Brurok, Berit; Mellema, Mirjam; Sandbakk, Øyvind; **Baumgart, Julia Kathrin**. Effects of different increments in workload and duration on peak physiological responses during seated upper-body poling. *European Journal of Applied Physiology 2019*; Volume 119.(9) s. 2025-2031
9. **Baumgart, Julia Kathrin**; Brurok, Berit; Sandbakk, Øyvind. Peak oxygen uptake in Paralympic sitting sports: A systematic literature review, meta- and pooled-data analysis. *PLoS ONE 2018* ;Volume 13.(2) s. 1-25
10. **Baumgart, Julia Kathrin**; Gurtler, Laura; Ettema, Gertjan; Sandbakk, Øyvind. Comparison of peak oxygen uptake and exercise efficiency between upper-body poling and arm crank ergometry in trained paraplegic and able-bodied participants. *European Journal of Applied Physiology 2018* ;Volume 118.(9) s. 1857-1867
11. **Baumgart, Julia Kathrin**; Moes, Maaïke; Skovereng, Knut; Ettema, Gertjan; Sandbakk, Øyvind. Examination of gas exchange and blood lactate thresholds in Paralympic athletes during upper-body poling. *PLoS ONE 2018* ;Volume 13.(10) s. 1-18
12. **Baumgart, Julia Kathrin**; Skovereng, Knut; Sandbakk, Øyvind. Comparison of Peak Oxygen Uptake and Test-Retest Reliability of Physiological Parameters between Closed-End and Incremental Upper-Body Poling Tests. *Frontiers in Physiology 2017* ;Volume 8. s. 1-9

13. Vandbakk, Kristine; Welde, Boye; Kruken, Andrea Hovstein; **Baumgart, Julia Kathrin**; Ettema, Gertjan; Karlsen, Trine; Sandbakk, Øyvind. Effects of upper-body sprint-interval training on strength and endurance capacities in female cross-country skiers. *PLoS ONE* 2017 ;Volume 12.(2)
14. **Baumgart, Julia Kathrin**; Sandbakk, Øyvind. Laboratory determinants of repeated-sprint and sport-specific-technique ability in world-class ice sledge hockey players. *International Journal of Sports Physiology and Performance* 2016 ;Volume 11.(2) s. 182-190

BOOK CHAPTER

1. **Baumgart, Julia Kathrin**; Brurok, Berit; Sandbakk, Øyvind. Paraidrett. In: *Bok. Idrettsfysioterapeuten*. Oslo, Norway: Cappelen Damm.
2. Brurok Berit; **Baumgart Julia Kathrin**. Idrett og funksjonshemming. In: *Bok. Idrettsvitenskap. Perspektiver og praksis*. Trondheim, Norway: NTNU.

CONFERENCE PUBLICATIONS

Scientific proceedings in report

1. **Baumgart, Julia Kathrin**; Høvik Carlsen, Camilla; Kocbach, Jan; Severin, Cecilia; Sandbakk, Øyvind. Using sensor technology to track performance in Para XC skiing: time well spent or time wasted? Nordic Winter Sports Conference; 2020-10-01 - 2020-10-02 Available online: <https://www.nordicwintersportsconference.com/2020-invited-speakers/>
2. **Baumgart, Julia Kathrin**; Brurok, Berit; Sandbakk, Øyvind. Peak oxygen uptake in different upper-body exercise modes. In: *Program book Rehabmove 2018*. Groningen, The Netherlands: GrafiMedia, University of Groningen 2018 ISBN 978-90-75823-93-6. s. 53-53
3. **Baumgart, Julia Kathrin**; Skovereng, Knut; Ettema, Gertjan; Sandbakk, Øyvind. Endurance performance in Paralympic sitting sports – testing and training. NVC conference; 2017-10-05 - 2017-10-06
4. **Baumgart, Julia Kathrin**; Sandbakk, Øyvind. Comparison of the test-retest reliability of physiological parameters during closed-end and incremental upper-body poling tests. In: *International congress on science and skiing - Book of Abstracts*. Salzburg, Austria: Department of Sport Science and Kinesiology, University of Salzburg 2016 ISBN 978-3-200-04885-0. s. 136-137
5. **Baumgart, Julia Kathrin**; Skovereng, Knut; Sandbakk, Øyvind. Determination of the second lactate threshold in Norwegian ice sledge hockey players during upper-body poling. In: *International congress on science and skiing - Book of Abstracts*. Salzburg, Austria: Department of Sport Science and Kinesiology, University of Salzburg 2016 ISBN 978-3-200-04885-0. s. 20-21
6. Skovereng, Knut; Sandbakk, Øyvind; **Baumgart, Julia Kathrin**. Gender differences in rate of perceived exertion at the first and second lactate threshold during roller skiing.. In: *International congress on science and skiing - Book of Abstracts*. Salzburg, Austria:

Department of Sport Science and Kinesiology, University of Salzburg 2016 ISBN 978-3-200-04885-0.

7. **Baumgart, Julia Kathrin**; Brurok, Berit; Sandbakk, Øyvind. Efficiency during submaximal poling in elite ice sledge hockey players and able-bodied cross-country skiers. In: *20th annual Congress of the EUROPEAN COLLEGE OF SPORT SCIENCE 24th - 27th June 2015, Malmö – Sweden BOOK OF ABSTRACTS.* : European College of Sport Science 2015 ISBN 978-91-7104-567-6.

Conference – oral presentations

1. Høivik Carlsen, Camilla; **Baumgart, Julia Kathrin**; Kocbach, Jan; Severin, Cecilia; Sandbakk, Øyvind. Using sensor technology to track performance in Para XC skiing: time well spent or time wasted?. Nordic Winter Sports Conference; 2020-10-01 - 2020-10-02
2. **Baumgart, Julia Kathrin**. Utholdenhets-testing av sittende para utøvere og bruk av resultatene i praksis. Forum for klinisk fysiologi; 2020-01-09 - 2020-01-10
3. Sandbakk, Øyvind; **Baumgart, Julia Kathrin**. Kunnskap for en mer inkluderende verden. Styremøte VI stiftelsen; 2020-11-24
4. **Baumgart, Julia Kathrin**. Endurance performance of Paralympic sitting athletes: How do we test it and what are the implications for practice?. Nordic classification seminar; 2019-09-28 - 2019-09-29
5. **Baumgart, Julia Kathrin**. Using sensor technology to understand performance in Para cross-country skiing: an outlook in the future. Nordic classification seminar; 2019-09-28 - 2019-09-29
6. **Baumgart, Julia Kathrin**. The digital wheelchair user - individual empowerment for a more active society. Instituttssamling INB; 2019-12-12 - 2019-12-12
7. **Baumgart, Julia Kathrin**; Brurok, Berit; Sandbakk, Øyvind. Differences in peak oxygen uptake between upper-body exercise modes: a meta-analysis. RehabMove Congress; 2018-12-11 - 2018-12-14
8. Sandbakk, Øyvind; **Baumgart, Julia Kathrin**. Research in the Paralympic and Olympic Sports at the Centre for Elite Sports Research in Trondheim. Forskning på paralympiske idretter - hvor vi er og hvor vi er på vei? Seminar Para forskning, Trondheim ; 2018-10-26
9. **Baumgart, Julia Kathrin**. What is possible to achieve in people with disabilities? - With a focus on endurance exercise performance in sitting sports. Idrettsmedisinsk Høstkongress; 2018-11-09 - 2018-11-11
10. **Baumgart, Julia Kathrin**; Ettema, Gertjan; Brurok, Berit; Sandbakk, Øyvind. Do wheelchair-bound people need to exercise as Paralympic athletes to be healthy?. Fusjonsseminaret for ansatte ved det framtidige fakultetet for medisin og helse; 2016-11-10
11. **Baumgart, Julia Kathrin**; Skovereng, Knut; Sandbakk, Øyvind. Determination of the anaerobic threshold in Norwegian ice sledge hockey players during upper-body poling. International Congress on Science and Skiing; 2016-12-09 - 2016-12-15
12. Welde, Boye; Vandbakk, Kristine; Hovstein, Andrea; **Baumgart, Julia Kathrin**; Ettema, Gerardus Johannes C; Karlsen, Trine; Sandbakk, Øyvind. On the effects of upper-body

- sprint-interval training on maximal strength and aerobic power in female cross-country skiers. 7th International Congress on Science and Skiing; 2016-12-10 - 2016-12-15
13. **Baumgart, Julia Kathrin**; Brurok, Berit; Sandbakk, Øyvind. Efficiency during submaximal poling in elite ice sledge hockey players and able-bodied cross-country skiers. Congress of the European College of Sports Sciences; 2015-06-24
 14. **Baumgart, Julia Kathrin**; Brurok, Berit; Sandbakk, Øyvind. Peak aerobic capacity in wheelchair racing and wheelchair basketball athletes with a spinal cord injury as compared to other disabilities. Nordic Spinal Cord Society (NoSCoS) conference; 2015-09-09 - 2015-09-11
 15. **Baumgart, Julia Kathrin**; Sandbakk, Øyvind. Differences in laboratory and on-ice capacities between world-class ice sledge hockey players with an amputation and a spinal cord defect. Paralympic Symposium in Munich; 2015-04-30 - 2015-05-01

Conference – poster presentations

1. **Baumgart, Julia Kathrin**; Haugnes, Pål; Bardal, Lars Morten; Østerås, Sindre; Kocbach, Jan; Sandbakk, Øyvind. Fluctuations in speed, power and kinematic patterns during low- and high-intensity exercise in Para cross-country sit skiing: a case study. International Congress on Science and Skiing (ICSS); 2019-03-11 - 2019-03-15
2. **Baumgart, Julia Kathrin**; Tønnessen, Espen; Eklund, Morten; Sandbakk, Øyvind. Training volume and intensity during a Paralympic cycle of a multiple swimming champion: a case study. Olympiatoppens forskningskonferanse; 2019-09-25
3. den Hartog, Emma; Blaauw, Eline; **Baumgart, Julia Kathrin**. Estimation of metabolic rate during submaximal exercise using heart rate, sex, age, training status and exercise mode in participants with and without a disability. Olympiatoppen forskningskonferanse; 2019-09-25 - 2019-09-25
4. Paulussen, Evy; Carlsen, Camilla Høvik; Haugnes, Pål; Kocbach, Jan; Sandbakk, Øyvind; **Baumgart, Julia Kathrin**. Comparison of performance, cycle kinematics and sub-technique selection between standing Paralympic and able-bodied cross-country skiers in a classical competition: a case series. Olympiatoppens forskningskonferanse; 2019-09-25 - 2019-09-25
5. Brurok, Berit; **Baumgart, Julia Kathrin**; Mellema, Mirjam; Sandbakk, Øyvind. Comparison of test protocols with different increments in workload and duration on peak oxygen uptake during upper-body poling. 6th INTERNATIONAL REHABMOVE STATE-OF-THE-ART CONGRESS; 2018-12-12 - 2018-12-14
6. **Baumgart, Julia Kathrin**; Haugnes, Pål Anders Bjerkan; Bardal, Lars Morten; Østerås, Sindre; Kocbach, Jan; Sandbakk, Øyvind. Speed and heart rate profiles in a Para cross-country sit skier: a case study. Olympiatoppen forskningskonferanse; 2018-09-25
7. **Baumgart, Julia Kathrin**; Guertler, Laura; Ettema, Gertjan; Sandbakk, Øyvind. Comparison of VO₂peak and exercise efficiency between upper-body poling and arm crank ergometry in trained able-bodied and paraplegic participants. Olympiatoppen forskningskonferanse; 2017-09-13 - 2017-09-13
8. **Baumgart, Julia Kathrin**; Skovereng, Knut; Ettema, Gertjan; Sandbakk, Øyvind. Gas exchange and blood lactate thresholds in Paralympic athletes: do they really exist?. Olympiatoppen forskningskonferanse; 2017-09-13 - 2017-09-13

9. **Baumgart, Julia Kathrin**; Sandbakk, Øyvind. Comparison of the test-retest reliability of physiological parameters during closed-end and incremental upper-body poling tests. Olympiatoppens forskningskonferanse; 2016-09-27
10. Skovereng, Knut; **Baumgart, Julia Kathrin**; Sandbakk, Øyvind. Gender differences in rate of perceived exertion at the first and second lactate threshold during roller skiing. International congress on science and skiing; 2016-12-10 - 2016-12-15
11. **Baumgart, Julia Kathrin**; Skovereng, Knut; Sandbakk, Øyvind. Determination of the second lactate threshold in Norwegian ice sledge hockey players during upper-body poling. Olympiatoppens forskningskonferanse; 2016-09-27
12. Vandbakk, Kristine; Welde, Boye; Kruken, Andrea; **Baumgart, Julia Kathrin**; Ettema, Gertjan; Karlsen, Trine; Sandbakk, Øyvind. Effects of upper-body sprint-interval training on strength and endurance adaptations in female cross-country skiers. Olympiatoppens forskningskonferanse; 2016-09-27
13. **Baumgart, Julia Kathrin**; Brurok, Berit; Sandbakk, Øyvind. Peak aerobic capacity between and within Paralympic sitting sports – a systematic literature review. International Paralympic Committee's (IPC) VISTA Conference; 2015-10-07 - 2015-10-10
14. Luchsinger, Harri; Kjærnli, Peder; Seim, Anders; **Baumgart, Julia Kathrin**. Rowing to Gold - a successful contribution by NTNU's experts in teams to the design of a rowing seat. Olympiatoppens forskningskonferanse 2015; 2015-09-10 - 2015-09-10
15. **Baumgart, Julia**; Sandbakk, Øyvind. Laboratory determinants of repeated sprint and technique ability in world class ice sledge hockey players. Seminar Toppidrett for funksjonshemmede; 2014-10-30
16. **Baumgart, Julia**; Sandbakk, Øyvind. Peak Aerobic Capacity Between And Within Paralympic Sitting Sports. Olympiatoppens Forskningskonferanse 2014; 2014-10-30

REVIEWER

Reviewer in the scientific journals

- British Journal of Sports Medicine Open
- International Journal of Sports Physiology and Performance
- International Journal of Sports Science and Coaching
- Journal of Visualized Experiments
- PLOS ONE
- Research Quarterly for Exercise and Sport
- Spinal Cord
- Scandinavian Journal of Sports Medicine