

## Sabrina Tartu

Date of birth: June 7<sup>th</sup> 1986 (34)

Married, one child

French

### PROFESSIONAL EXPERIENCE

**To start 01/12/2020 to 31/01/2022: Postdoctoral contract** – Effects of agrochemical exposure on common toad metabolism and gut microbiota composition. Centre d'études biologiques de Chizé, France. Supervisor: Dr Francois Brischoux

**01/09/2019 to 31/09/2020: Postdoctoral contract** – Temporal trends of mercury in a global warming context, a study in polar seabirds. Centre d'études biologiques de Chizé, France. Supervisor: Dr Olivier Chastel

**01/03/2017 to 28/02/2018: Postdoctoral contract** - Effects of feeding ecology on pollutant load in Arctic Marine mammals. Norwegian polar institute, Norway. Project leader: Dr Heli Routti

**01/03/2015 to 28/02/2017: Postdoctoral contract** - Synergistic effects of pollutants and climate change on energy metabolism of polar bears. Norwegian polar institute, Norway. Project leader: Dr Heli Routti

**01/10/2014 to 31/01/2015: Short-term contract** – Hormones and pollutants in seabirds. Centre d'études biologiques de Chizé, France. Supervisor: Dr Olivier Chastel

**01/10/2011 to 30/09/2014: PhD student** - Relationships between environmental contaminants and hormones involved in breeding decisions, a study in polar seabirds. Centre d'études biologiques de Chizé, France. Supervisor: Dr Olivier Chastel

**01/09/2010 to 30/09/2011: Internship** - Influence of environmental stressors on breeding behaviour in Black-legged kittiwakes *Rissa tridactyla*. Centre d'études biologiques de Chizé, France. Supervisor: Dr Olivier Chastel

**01/01/2010 to 15/06/2010: 2<sup>nd</sup> year Masters internship** - Study of social sensory preferences in European starlings *Sturnus vulgaris* by operant conditioning. Animal and human Ethology lab Rennes 1, France. Supervisors: Drs Isabelle George, Laurence Henry & Martine Hausberger

**01/04/2009 to 30/08/2009: 1<sup>st</sup> year Masters internship** - Relationship between hormones and personality in guinea pigs *Cavia aperea porcellus*. Centre d'études biologiques de Chizé, France. Supervisor: Dr Xavier Bonnet

### EDUCATION

**8/01/2015 PhD degree in Ecotoxicology-Ecophysiology** “Environmental and population’s biology, ecology” (Highest honours) Université de La Rochelle, La Rochelle, France

**15/06/2010 Master’s degree in Science** “Animal and human behaviour” (Magna cum laude) Université de Rennes 1, Rennes, France

**15/06/2008 Bachelor’s degree in Science** “Organisms and population’s biology”. Université de Bretagne Occidentale, Brest, France

### PUBLICATIONS

Peer-reviewed scientific journals (30 publications, 14 as first author, 10 without PhD supervisor, citation source “Google Scholar” excluding self-citations)

1. **Tartu, S.**, Goutte, A., Bustamante, P., Angelier, F., Moe, B., Clément-Chastel, C., Bech, C., Gabrielsen, G. W., Bustnes J.O. & Chastel, O. (2013). To breed or not to breed: endocrine response to mercury contamination by an Arctic seabird. *Biology letters*, 9(4), 20130317. **(Journal 5-yr impact factor: 3.566, Citations: 111)**

2. Blévin, P., **Tartu, S.**, Angelier, F., Leclaire, S., Bustnes, J. O., Moe, B., Herzke D., Gabrielsen G.W. & Chastel, O. (2014). Integument colouration in relation to persistent organic pollutants and body condition in arctic breeding black-legged kittiwakes. *Science of the Total Environment*, 470, 248-254. **(5-yr IF: 6.419, Contribution: analysis, 1<sup>st</sup> draft, review and edit, Citations: 16)**
3. **Tartu, S.**, Angelier, F., Herzke, D., Moe, B., Bech, C., Gabrielsen, G. W., Bustnes J.O. & Chastel, O. (2014). The stress of being contaminated? Adrenocortical function and reproduction in relation to persistent organic pollutants in female black legged kittiwakes. *Science of The Total Environment*, 476, 553-560. **(5-yr IF: 6.419, Citations: 25)**
4. Goutte, A., Angelier, F., Bech, C., Clément-Chastel, C., Dell’Omo, G., Gabrielsen, G. W., Lendvai A.Z., Moe B., Noreen E., Pinaud D., **Tartu S.**, & Chastel, O. (2014). Annual variation in the timing of breeding, pre breeding foraging areas and corticosterone levels in an Arctic population of black-legged kittiwakes. *Mar Ecol Prog Ser*, 496, 233-247. **(5-yr IF: 2.665, Contribution: 1<sup>st</sup> draft, review and edit, Citations: 18)**
5. Schultner, J., Moe, B., Chastel, O., **Tartu, S.**, Bech, C., & Kitaysky, A. S. (2014). Corticosterone mediates carry-over effects between breeding and migration in the kittiwake *Rissa tridactyla*. *Mar Ecol Prog Ser*, 496, 125-133. **(5-yr IF: 2.665, Contribution: review and edit, Citations: 30)**
6. **Tartu, S.**, Bustamante, P., Goutte, A., Cherel, Y., Weimerskirch. H., Bustnes J.O., & Chastel, O. (2014) Age-related mercury contamination and relationship with luteinizing hormone in a long-lived Antarctic bird. *PLoS ONE*, 9(7): e103642. **(5-yr IF: not provided, Citations: 16)**
7. **Tartu, S.**, Gabrielsen, G.W., Herzke, D., Bustnes, J.O., Blévin, P., Ellis, H., & Chastel O. (2014) Endocrine and fitness correlates of long-chain perfluorinated carboxylates exposure in Arctic breeding black-legged kittiwakes. *Environmental Science and Technology*, 48 (22), 13504–13510. **(5-yr IF: 7.864, Citations: 26)**
8. Carravieri, A., Bustamante, P., **Tartu, S.**, Meillère, A., Labadie, P., Budzinski, H., Peluhet, L., Barbraud, C., Weimerskirch, H., Chastel, O., Cherel, Y., (2014) Wandering Albatrosses Document Latitudinal Variations in the Transfer of Persistent Organic Pollutants and Mercury to Southern Ocean Predators. *Environmental Science and Technology*, 48, 14746–14755. **(5-yr IF: 7.864, Contribution: review and edit, Citations: 24)**
9. **Tartu, S.**, Wingfield, J.C., Bustamante, P., Angelier, F., Budzinski, H., Labadie P., Bustnes J.O., Weimerskirch. H., & Chastel, O. (2015) Corticosterone, prolactin and egg-neglect behaviour in relation to mercury and legacy POPs in a long-lived Antarctic bird. *Science of the Total Environment*, 505, 180-188. **(5-yr IF: 6.419, Citations: 47)**
10. **Tartu S.**, Angelier; F., Bustnes, J.O., Moe, B., Hanssen, S.A., Herzke, D., Gabrielsen, G.W., Verboven, N., Verreault, J., Labadie, P., Budzinski, H., Wingfield, J.C., and Chastel, O. (2015) Polychlorinated biphenyl exposure and corticosterone levels in seven polar seabirds. *Environmental pollution*, 197, 173-180. **(5-yr IF: 6.939, Citations: 14)**
11. **Tartu, S.**, Lendvai, A., Bustamante, P., Moe, B., Blévin, P., Bech, C., Gabrielsen, G. W., Bustnes J.O., Herzke, D., & Chastel, O. (2015) Increased adrenal responsiveness and delayed hatching date in relation to polychlorinated biphenyl exposure in Arctic-breeding black-legged kittiwakes (*Rissa tridactyla*). *General and Comparative Endocrinology*, 219, 165-172. **(5-yr IF: 2.435, Citations: 19)**
12. Goutte, A., Barbraud, C., Herzke, D., Bustamante, P., Angelier, F., **Tartu, S.**, Clément-Chastel, C., Moe, B., Bech, C., Gabrielsen, G.W., Bustnes, J.O. and Chastel, O. (2015) Survival rate and breeding outputs in a high Arctic seabird exposed to legacy persistent organic pollutants and mercury. *Environmental Pollution*. 200,1-9. **(5-yr IF: 6.939, Contribution: 1<sup>st</sup> draft, review and edit, Citations: 39)**
13. Angelier, F., Wingfield, J.C., **Tartu, S.** and Chastel, O. (2016) Does prolactin mediate parental and life-history decisions in response to environmental conditions in birds? A review. *Hormones and behavior*, 77, 18-29. **(5-yr IF: 3.987, Contribution: 1<sup>st</sup> draft, review and edit, Citations: 38)**

14. **Tartu, S.**, Bustamante, P., Angelier, F., Lendvai, A.Z., Moe, B., Blevin, P., Bech, C., Gabrielsen, G.W., Bustnes, J.O. and Chastel, O. (2016) Mercury exposure, stress and prolactin secretion in an Arctic seabird: an experimental study. *Functional Ecology*, 30, 596–604 (**2019 IF: 4.430, Citations: 29**)
15. **Tartu, S.**, Bourgeon, S., Aars, J., Andersen, M., Ehrich, D., Thiemann, G.W., Welker, J.M. and Routti, H. (2016) Geographical Area and Life History Traits Influence Diet in an Arctic Marine Predator. *PLoS one*, 11(5), p.e0155980. (**5-yr IF: not provided, Citations: 12**)
16. Blévin, P., Angelier, F., **Tartu, S.**, Ruault, S., Bustamante, P., Herzke, D., Moe, B., Bech, C., Gabrielsen, G.W., Bustnes, J.O. and Chastel, O. (2016) Exposure to oxychlorane is associated with shorter telomeres in arctic breeding kittiwakes. *Science of the Total Environment*, 563, 125-130. (**5-yr IF: 6.419, Contribution: analysis, 1<sup>st</sup> draft, review and edit, Citations: 24**)
17. Bustnes, J.O., Bårdsen, B.J., Moe, B., Herzke, D., Hanssen, S.A., Sagerup, K., Bech, C., Nordstad, T., Chastel, O., **Tartu, S.** and Gabrielsen, G.W. (2016) Temporal variation in circulating concentrations of organochlorine pollutants in a pelagic seabird breeding in the high arctic. *Environmental Toxicology and Chemistry*, 9999,1-7. (**2019 IF: 3.152, Contribution: review and edit, Citations: 8**)
18. **Tartu, S.**, Bourgeon, S., Aars, J., Andersen M., Polder, A., Thiemann, G.W., Welker, J.M. and Routti, H. (2017) Sea ice-associated decline in body condition leads to increased concentrations of lipophilic pollutants in polar bears (*Ursus maritimus*). *Science of the Total Environment*, 579, 409-419 (**5-yr IF: 6.419, Citations: 18**)
19. **Tartu, S.**, Bourgeon, S., Aars, J., Andersen, M., Lone, K., Jenssen, B. M., Polder, A., M., Thiemann, G.W., Torget V., Welker, J.M. & Routti, H. (2017). Diet and metabolic state are the main factors determining concentrations of perfluoroalkyl substances in female polar bears from Svalbard. *Environmental Pollution*, 229, 146-158. (**5-yr IF: 6.939, Citations: 7**)
20. Bourgeon, S., Riemer, A. K., **Tartu, S.**, Aars, J., Polder, A., Jenssen, B. M., & Routti, H. (2017). Potentiation of ecological factors on the disruption of thyroid hormones by organo-halogenated contaminants in female polar bears (*Ursus maritimus*) from the Barents Sea. *Environmental Research*, 158, 94-104. (**5-yr IF: 5.735, Contribution: analysis, 1<sup>st</sup> draft, review and edit, Citations: 8**)
21. Blévin, P., **Tartu, S.**, Ellis, H. I., Chastel, O., Bustamante, P., Parenteau, C., ... & Gabrielsen, G. W. (2017). Contaminants and energy expenditure in an Arctic seabird: Organochlorine pesticides and perfluoroalkyl substances are associated with metabolic rate in a contrasted manner. *Environmental Research*, 157, 118-126. (**5-yr IF: 5.735, Contribution: analysis, 1<sup>st</sup> draft, review and edit, Citations: 13**)
22. Blévin, P., Angelier, F., **Tartu, S.**, Bustamante, P., Herzke, D., Moe, B., ... & Chastel, O. (2017). Perfluorinated substances and telomeres in an Arctic seabird: Cross-sectional and longitudinal approaches. *Environmental Pollution*, 230, 360-367. (**5-yr IF: 6.939, Contribution: analysis, 1<sup>st</sup> draft, review and edit, Citations: 14**)
23. Munoz, G., Labadie, P., Geneste, E., Pardon, P., **Tartu, S.**, Chastel, O., & Budzinski, H. (2017). Biomonitoring of fluoroalkylated substances in Antarctica seabird plasma: Development and validation of a fast and rugged method using on-line concentration liquid chromatography tandem mass spectrometry. *Journal of Chromatography A*, 1513, 107-117. (**5-yr IF: 3.861, Contribution: review and edit, Citations: 12**)
24. Routti H., Aars J., Fuglei E., Hanssen L., Lone K., Polder A., Pedersen Å.Ø., **Tartu S.**, Welker J.M., & Yoccoz N.G. (2017). Emission changes dwarf the influence of feeding habits on temporal trends of per- and polyfluoroalkyl substances in two Arctic top predators. *Environmental Science and Technology*, 51 (20), 11996–12006. (**5-yr IF: 7.864, Contribution: 1<sup>st</sup> draft, review and edit, Citations: 14**)
25. **Tartu, S.**, Bourgeon, S., Aars, J., Lille-Langøy R., Størseth T.R., Brunsvik A., Goksøyr A., Jenssen B.M., Polder, A., M., Thiemann, G.W., Torget V. & Routti, H. Multiple-stressor effects in an apex

- predator: combined influence of pollutants and sea ice decline on lipid metabolism in polar bears. (2017) *Scientific Reports*, 7, 16487. **(2019 IF: 3.998, Citations: 13)**
26. Vihtakari, M., Welcker, J., Moe, B., Chastel, O., **Tartu, S.**, Hop, H., Bech, C., Descamps, S. & Gabrielsen, G. W. (2018). Black-legged kittiwakes as messengers of Atlantification in the Arctic. *Scientific reports*, 8(1), 1178. **(2019 IF: 3.998, Contribution: analysis, 1<sup>st</sup> draft, review and edit, Citations: 39)**
27. **Tartu, S.**, Aars J., Andersen M., Polder A., Bourgeon, S., Merkel B., Lowther A.D., Bytingsvik J., Welker J.M., Derocher A.E., Jenssen B.M., & Routti, H. (2018) Choose Your Poison—Space-Use Strategy Influences Pollutant Exposure in Barents Sea Polar Bears. *Environmental science & technology*, 52(5), 3211-3221. **(5-yr IF: 7.864, Citations: 2)**
28. Routti, H., Atwood, T., Bechshoft, T., Boltunov, A., Ciesielski, T. M., Desforges, J. P., ... & **Tartu, S.** (2019). State of knowledge on current exposure, fate and potential health effects of contaminants in polar bears from the circumpolar Arctic. *Science of the Total Environment*, 664, 1063-1083 **(5-yr IF: 6.419, Contribution: 1<sup>st</sup> draft, review and edit, Citations: 16)**
29. Dietz, R., Letcher, R. J., Desforges, J. P., Eulaers, I., Sonne, C., Wilson, S., ..., **Tartu, S.**, et al. (2019). Current state of knowledge on biological effects from contaminants on arctic wildlife and fish. *Science of The Total Environment*, 133792. **(5-yr IF: 6.419, Contribution: review and edit, Citations: 7)**
30. **Tartu, S.**, Fisk, A. T., Götsch, A., Kovacs, K. M., Lydersen, C., & Routti, H. (2020). First assessment of pollutant exposure in two balaenopterid whale populations sampled in the Svalbard Archipelago, Norway. *Science of the Total Environment*, 718, 137327. **(5-yr IF: 6.419, Citations: 2)**

#### Chapters in collective volumes

Routti, H., Jenssen, B. M., & **Tartu, S.** (2018). Ecotoxicologic Stress in Arctic Marine Mammals, With Particular Focus on Polar Bears. In *Marine Mammal Ecotoxicology* (pp. 345-380). Academic Press. **(Citations: 0)**

#### National report

AMAP Assessment 2018: Biological Effects of Contaminants on Arctic Wildlife and Fish. Arctic Monitoring and Assessment Programme (AMAP)

#### Under revision

**Tartu, S.**, Blévin, P., Bustamante, P., Angelier, A., Bech, C., Bustnes, J.O., Gabrielsen, G.W., Goutte, A., Moe, B., Sauser, C., Sire, J., Barbraud, C. and Chastel, O. Less mercury and larger size over 17 years: does retreating sea ice benefit to Svalbard kittiwakes? *Global Change Biology* (July 2020).

## COMMUNICATIONS

#### Invited speaker

- 2013 Effects of pollutants on reproduction, hormones and phenotype in female black-legged kittiwakes. Kittiwake workshop, NTNU, Trondheim, Norway (20-22 March)
- 2017 Ecotoxicological studies in polar bears, INSA CarMeN Laboratory, Lyon, France
- 2018 Major results of the Bear Energy project, Laboratory of Alpine Ecology, Grenoble, France

#### Oral (peer-reviewed, internationally established conferences)

- 2011 Polar seabirds in a changing environment: a mechanistic approach. 10th Ny-Ålesund seminar, Kjeller, Norway (25-26 October).
- 2012 Mercury suppresses breeding readiness in an Arctic seabird. 8th Ecology and behavior meeting, Chizé, France (2-6 April)

- 2013 Influences of persistent organic pollutants on the stress response of an Antarctic long-lived bird. 9th Ecology and behavior meeting, Strasbourg, France (22-26 April)
- 2014 Mercury and persistent organic pollutants as endocrine disruptors in polar seabirds. SETAC Europe 24th Annual Meeting, Basel, Switzerland (11-15 May)
- 2015 Relationships between contaminants and hormones involved in breeding decisions. 2nd World seabird conference, Cape Town, South-Africa (26-30 October)
- 2016 Relationships between contaminants and hormones involved in breeding decisions. 10th Arctic frontiers conference, Tromsø, Norway (24-29 January)
- 2016 How do fat and POPs get along? Insights in a feast and fast specialist, the polar bear. SETAC Europe 26th Annual Meeting, Nantes, France (22-26 May)
- 2017 Combined effect of sea ice retreat and pollutants on lipid metabolism in polar bears. SETAC Europe 27th Annual Meeting, Brussels, Belgium (7-11 May)
- 2017 Combined effect of sea ice retreat and pollutants on lipid metabolism in polar bears. 37th International Symposium DIOXIN, Vancouver, Canada (20-25 August)

*To come*

- 2020 Drivers and trends of mercury exposure in Svalbard kittiwakes in a warming context over 17 years. SETAC North-America 41<sup>st</sup> Annual meeting, Fort Worth, TX, USA (15-19 November)

Poster

- 2012 Mercury suppresses breeding readiness in an Arctic seabird. 10th International Symposium of Avian Endocrinology, Gifu, Japan (5-9 June)

## FIELDWORK

Svalbard, Arctic

- Leading researcher for studies on black-legged kittiwakes, field assistant for projects on common eiders and glaucous gulls (3.5 months in all). Funding: French polar institute (IPEV) and Arctic field grant from Svalbard Science Forum.
- Fieldworker for polar bear and whale survey in the Barents Sea Arctic ice edge (10 days). Funding: Norwegian polar institute.

Terre-Adélie, Antarctica

- Leading researcher for studies on snow petrels, field assistant for projects on Adélie penguins and south polar skuas (2 months). Funding: French polar institute (IPEV)

## FUNDINGS AND AWARDS

- 2011 Doctoral grant from the French research agency (ANR) 100 000 EUR
- 2011 Young scientist travelling grant from the Norwegian research council 10 000 NOK
- 2012 Arctic field grant from the Svalbard science forum 55 000 NOK
- 2015 FRQNT postdoc excellence grant 35 000 CAD (declined)

## SUPERVISING AND MENTORING ACTIVITIES

- Supervision of Master student groups on “a-week long research projects” 2010-2014
- Co-supervision of three Master Students:
  - 2012 P. Blévin “Relationships between tegument coloration and persistent organic pollutants in kittiwakes” CEBC-CNRS, France
  - 2013 A. V. Ask “Relationships between thyroid hormones and PFAS concentrations in kittiwakes”, NTNU Trondheim, Norway
  - 2014 J. Barber “Relationships between cortisol concentrations and personality in kittiwakes”, CEBC-CNRS, France
- Training of fieldworkers to bird catching and blood sampling (2012-2013)

## OUTREACH

### Interviews for online journals:

2013 Barents Observer: What the Black-Legged Kittiwake can teach us about mercury

2017 24Heures: L'ours polaire est équipé pour gérer le réchauffement

(<https://www.24heures.ch/savoirs/environnement/ours-polaire-equipe-gerer-rechauffement/story/16837600>)

2018 ScienceNews: A peek into polar bears' lives reveals revved-up metabolisms

(<https://www.sciencenews.org/article/peek-polar-bears-lives-reveals-revved-metabolisms>)

2020 ScienceNorway.no: High levels of pollutants in polar bears from the Barents Sea – what are the reasons behind?

### Webinar for school audience

2020 How pesticides affects Arctic fauna's health? International Polar week APECS France (11-15 May).

## REVIEWING ACTIVITIES

### Journals:

Environmental pollution, Current zoology, Marine biology, Environmental Science and Technology, Science of the total Environment, Ecology and Evolution, Global change biology, Children Obesity, Ecotoxicology and Environmental Safety, Naturwissenschaften, Environmental research, PlosOne

### Funding agencies:

National Science Center Poland

## OTHER RELEVANT INFORMATION

### Career break

01/03/2018-31/08/2019: 18 month maternity leave