

## RAQUEL FLYNN

Postdoctoral Fellow in the Earth, Marine and Environmental Sciences Department,  
University of North Carolina at Chapel Hill  
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### Education

**PhD. In Ocean and Atmospheric science**, UNIVERSITY OF CAPE TOWN. 2020-2023

Thesis: *Phytoplankton's role in the biological carbon pump during the growth season across the Atlantic Southern Ocean*

**Supervisor(s): Sarah Fawcett (UCT)**

**MSc. In Ocean and Atmospheric science**, UNIVERSITY OF CAPE TOWN. 2018-2019

Thesis: *On-shelf nutrient trapping enhances the fertility of the southern Benguela Upwelling System*

**Supervisor(s): Sarah Fawcett (UCT) and Julie Granger (UCONN)**

**BSc. (Hons.) with distinction in Ocean and Atmospheric Science**, UNIVERSITY OF CAPE TOWN. 2016

Thesis: *Net primary production and carbon export in the southern Benguela upwelling system*

**Supervisor(s): Sarah Fawcett (UCT)**

**BSc. in Marine Biology, Oceanography and Religious Studies**, UNIVERSITY OF CAPE TOWN. 2012-2015

### Research Interests

Marine Biogeochemistry, Nitrogen Cycle, Carbon Export, Stable Isotopes, Phytoplankton Dynamics, Southern Ocean, Upwelling

### Publications

#### *Published peer reviewed journals*

1. Frinault B, Christie F, Fawcett S, **Flynn R.F.**, Hutchinson K, Montes Strevens C, Taylor M, Woodall L, Barnes D. 2022. Antarctic Seabed Assemblages in an Ice-Shelf adjacent Polynya, Western Weddell Sea. *Biology*. IF (5.168)
2. Puccilli E, Porri F, Altieri K, **Flynn R.F.**, Little H, Louw T, Patrick P, Sparks C, Tsanwani M. Walker D, Fawcett E.S. 2022. Ocean ecosystem services in the age of the blue economy: the role of marine invertebrate biodiversity. *Ecological Indicators*. IF (4.958)
3. Mdutyana M, Sun x, Burger JM, **Flynn RF**, Smith S, van Horsten N, Roychoudhury A, Planquette H, Bucciarelli E, Thomalla S, Ward B and Fawcett SE. 2022. The kinetics of ammonium uptake and oxidation across the Southern Ocean. *Limnology and Oceanography*. IF (4.745)
4. **Flynn RF**, Bornmann TG, Burger JM, Smith S, Spence KAM and Fawcett SE. 2021. Summertime productivity and carbon export potential in the Weddell Sea, with a focus on the waters adjacent to Larsen C Ice Shelf. *Biogeosciences*. IF (4.295)
5. Henley SF, Cavan EL., Fawcett SE, ..., **Flynn RF**, Smith S. 2020. Changing Biogeochemistry of the Southern Ocean and Its Ecosystem Implications. *Frontiers in Marine Science*. IF (4.44)
6. **Flynn RF**, Granger J, Veitch J, Siedlecki S, Burger JM, Pillay K and Fawcett SE. 2021. On-shelf nutrient trapping enhances the fertility of the southern Benguela upwelling system. *Journal of Geophysical Research: Oceans*. IF (3.405)
7. **Flynn RF**, Burger JM, Pillay K and Fawcett SE. 2018. Wintertime rates of net primary production and nitrate and ammonium uptake in the southern Benguela upwelling system. *African Journal of Marine Science*. 40: 253-266. IF (1.183)

#### **CONFERENCE CONTRIBUTIONS** (as first author; presenting author)

1. **Flynn, R.F.**, McQuaid, J., Haraguchi, L., Ramlet, P., Burger, Roychoudry. A, R., Smith S., and Fawcett. S.E. "Nanoplankton: vectors of carbon export across the springtime Southern Ocean". Gordon Research Conference: Ocean Biogeochemistry, Barcelona, Spain, May 2022.
2. **Flynn, R.F.**, Granger, J., Veitch, J.A., Siedlecki, S., Burger, J., Pillay, K., and Fawcett, S.E. "On-shelf nutrient trapping enhances the fertility of the southern Benguela Upwelling System". Gordon Research Seminar: Ocean Biogeochemistry, Barcelona, Spain, May 2022.
3. **Flynn, R.F.**, McQuaid, J., Haraguchi, L., Ramlet, P., Burger, Roychoudry. A, R., Smith S., and Fawcett. S.E. "Iron and silicate controls on primary production and carbon export potential across the springtime Southern Ocean". Ocean Sciences Meeting 2022, online, February 2022.

4. **Flynn, R.F.**, McQuaid, J., Haraguchi, L., Ramlet, P., Burger, Smith S., and Fawcett, S.E. "Springtime rates of iron and nitrogen uptake across the Atlantic Southern Ocean". Association for the Sciences of Limnology and Oceanography 2021, online, August 2021.
5. **Flynn, R.F.**, Bornamn, T., Burger, J., Smith, S., Spence, S., and Fawcett, S.E. "Summertime productivity and carbon export potential in the Weddell Sea". Ocean Carbon and Biogeochemistry summer workshop, online, June 2021.
6. **Flynn, R.F.**, Bornamn, T., Burger, J., Smith, S., Spence, S., and Fawcett, S.E. "Summertime productivity and carbon export potential in the Weddell Sea". Weddell Sea-Droning Maudland Workshop, online, September 2020.
7. **Flynn, R.F.**, Bornamn, T., Burger, J., Smith, S., Spence, S., and Fawcett, S.E. "Rates of net primary production and carbon export potential in the Weddell Sea". European Geophysical Union Conference 2020, online, May 2020.
8. **Flynn, R.F.**, **Granger, J.**, Burger, J.M., Veitch, J., Siedlecki, S., Pillay, K., Fawcett, S.E, "On-shelf nutrient trapping enhances the fertility of the southern Benguela upwelling system". Association for the Sciences of Limnology and Oceanography 2019 Aquatic Sciences Meeting, San Juan, Puerto Rico, February 2019
9. **Flynn, R.F.**, Granger, J., Burger, J.M., Pillay, K., **Fawcett, S.E.**, "A nitrate isotope view of the seasonal nitrogen cycle of the southern Benguela upwelling system". Advancing Earth and Space Science Fall Meeting, Washington D.C., United States of America, December 2018
10. **Flynn, R.F.**, Burger, J.M., Pillay, K., Fawcett, S.E., "Wintertime rates of total, new and regenerated production in the southern Benguela Upwelling System". South African Marine Science Symposium, Port Elizabeth, South Africa, July 2017
11. **Flynn, R.F.**, Burger, J.M., Pillay, K., Fawcett, S.E., "Primary production and carbon export in the Southern Benguela ecosystem". Benguela Symposium, Cape Town, November 2016.

#### **Supervision/Mentoring** (supervision/mentoring with)

Sadiyah Rawat, MSc., University of Cape Town. *2023-current* (Sarah Fawcett, Mhlangabezi Mduyana)  
 Sadiyah Rawat, BSc. (Honours), University of Cape Town. *2022* (Sarah Fawcett, Mhlangabezi Mduyana)  
 Sizwekazi Yapi, MSc. Student, University of Cape Town. *2020-current* (Sarah Fawcett)  
 Amelia Deary, BSc. (Honours), University of Cape Town. *2020* (Sarah Fawcett)

#### **Research Expeditions and Experience** (Team leader)

1. Phytoplankton response to the UPwelling Cycle (PUPcycle) II to the California Upwelling. Days at sea: 16. *June 2023*
2. Day trips to Elandsbaai, South Africa, as part of the *Benguela* project. Days at sea: 7. *March 2020*
3. Southern oCean seAsonAL Experiment (SCALE) spring cruise to the Southern Ocean on board of the SA Agulhas II. Days at sea: 42. *October-November 2019*
4. Southern oCean seAsonAL Experiment (SCALE) winter cruise to the Southern Ocean on board of the SA Agulhas II. Days at sea: 25. *July-August 2019*
5. Weddell Sea Expedition 2019 and South African National Antarctic Expedition (SANAE) take-over voyage 58 to the Southern Ocean on board of the SA Agulhas II. Days at sea: 100. *December 2017-March 2018*
6. Day trips to False Bay, South Africa, as part of the *False Bay Water Quality* project. Days at sea: 7. *May, August, December 2018*
7. SEAmester III, South African first floating university on board of the SA Agulhas II. Days at sea: 12. *July 2018*
8. Integrated Ecosystem Programme (IEP) cruise to the southern Benguela Upwelling System on board the RV Algoa. Days at sea: 7. *May 2017*
9. Leg 3 of the Antarctic Circumpolar Expedition (ACE) on board the Akademik Trysnikov. Days at sea: 25. *February 2017*
10. SEAmester I, South African first floating university on board of the SA Agulhas II. Days at sea: 12. *July 2016*
11. Integrated Ecosystem Programme (IEP) cruise to the southern Benguela Upwelling System on board the RV Algoa. Days at sea: 10. *May 2016*

#### **Teaching and Experience**

Lab technician in the Marine Biogeochemistry Lab at the University of Cape Town. *February-June 2023*  
 Lab Demonstrator for the BSc. (Hons.) Ocean Biogeochemistry module. *2017, 2019-2022*  
 Academic Tutor for second year BSc. Principles of Oceanography. *August-December 2021*  
 Lab Demonstrator for MSc. Ocean Biogeochemistry module. *2019, 2020*  
 Academic Tutor for second year BSc. Introduction to Oceanography. *February-June 2018*