

Professor Matt A. O'Regan

Born: 1972-12-09

Civil Status: Married, 2 children (2005, 2007)

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ACADEMIC DEGREES

Docent 2016, *Physical properties of marine sediments*, Department of Geological Sciences, Stockholm University, Sweden.

Ph.D 2007, *A Cenozoic History of the Central Arctic Ocean*, Graduate School of Oceanography, University of Rhode Island, USA.

B.Sc. 1994, *Environmental Science and Biology*, Trent University, Ontario, Canada.

POSITIONS

2023 - Professor of Marine Geology, Department of Geological Sciences, Stockholm University, Sweden.

2012-23 Research Scientist, *Sediment Physical Properties*, Department of Geological Sciences, Stockholm University, Sweden.

2010-12: Lecturer, *Sedimentary Geology*, School of Earth and Ocean Science, Cardiff University, UK.

2009–10: Post-Doctoral Researcher, Stockholm University, Department of Geological Sciences/ Bert Bolin Centre for Climate Research. Project: *Arctic circulation and sea-ice patterns: Perspectives from marine sediment records*.

2007-08: Post-Doctoral Researcher, University of Rhode Island/Cardiff University. Project: *Alternative Methods for characterizing strength in poorly consolidated formations*. Funded by BP America.

2002: Research Assistant, *Paleomagnetism laboratory*, Southampton Oceanography Centre, UK.

1997–01: Marine Laboratory Specialist, Ocean Drilling Program, College Station, Texas, USA.

1996–97: Student Research Assistant, *Marine Geomechanics Laboratory*, Bedford Institute of Oceanography, Nova Scotia, Canada.

SHIPBOARD EXPERIENCE

2024: Shipboard Scientist, Work Package Leader (Marine Geology), *North Greenland Earth-Ocean-Ecosystem Observatory (GEOEO)*, I/B Oden, Thule, Greenland - Thule, Greenland, Aug 4 – Sept 19.

2021: Shipboard Scientist, *PeCaBeau* (Permafrost Carbon in the Beaufort Sea), CCGS Amundsen, Resolute – Cambridge Bay, Canada, Sept 9 – Oct 8.

2019: Shipboard Scientist, Work Package Leader (Sediment coring and processing), Ryder Glacier Expedition, I/B Oden, Thule, Greenland - Thule, Greenland, Aug 3 – Sept 11.

2015: Shipboard Scientist, PI for Geology Program, Transitions in the Seasonal Ice Zone (TRANSSIZ), Polarstern, May 19 – June 28, Bremerhaven, Germany – Longyearbyen, Svalbard.

2014: Shipboard Scientist, Work Package Leader (Sediment Physical Properties), *SWERUS-C3*, I/B Oden, Barrow Alaska - Tromsø, Norway, Aug 18 – Oct 4.

2013: Shipboard Scientist, R/V Helmer Hanssen, April 15-24, Tromsø, Norway.

2010: Shipboard Scientist, Swedish *Oden* Southern Ocean (OSO0910) expedition to Pine Island Bay.

2009: Shipboard Scientist, Sea Acceptance Test II (SAT) for the *Oden* EM122 multibeam off Svalbard.

2004: Shipboard Scientist, Stratigraphic Correlator, IODP 302, *The Arctic Coring Expedition (ACEX)*.

2003: Shipboard Scientist, Physical Properties, ODP Leg 207, *Demerara Rise*.

1997–01: Marine Laboratory Specialist, 10 cruises on the *JOIDES Resolution*. ODP Legs; 174a – New Jersey Sea-level, 175 – Benguela Current, 177 – Southern Ocean Paleooceanography, 179 – Hammer Drilling (Indian Ocean), 181 – Southwest Pacific Gateways, 183 – Kerguelan Plateau-Broken Ridge, 185 – Izu-Mariana Margin, 188 – Prydz Bay, 190 – Nankai Trough, 199 – Paleogene Equatorial Pacific.

RESPONSIBILITIES AND BOARD MEMBERSHIPS

- 2024 – Board of Science, Faculty of Science, Stockholm University
- 2022 – Geo-environmental science teacher hiring board, Faculty of Science, Stockholm University
- 2022 – Proposal evaluation panel, The Research Council of Norway
- 2021 – Proposal evaluation panel, The Research Council of Norway
- 2020–23 – Scholarship application committee for Faculty of Science (Natural Sciences), Stockholm University

HONORS AND AWARDS

- 2022 – Outstanding Reviewer. Communications Earth & Environment
- 2018 – Anna-Greta & Holger Crafoord Stipend, Royal Swedish Academy of Sciences
- 2003 – Schlanger Ocean Drilling Fellowship, United States Science Support Program

RESEARCH FUNDING

Total Funding 78.51 MSEK: as main applicant (PI) 24.90 MSEK, as co-applicant 54.61 MSEK.

- 2024 – **Co-applicant.** Knut and Alice Wallenberg Foundation Project Grant. Tracing how Atlantic Water impacts North Greenland (THAWING). **24 MSEK**
- 2024 – **Principal investigator.** VR project grant, Research collaboration Italy-Sweden. Insights into climate change in the Arctic Ocean: disentangling carbon-climate complexities in Arctic sediments using hyperspectral core imaging. DNR 2023-06920 **0.75 MSEK**
- 2023 – **Principal investigator.** FORMAS research grant. Climate change and Carbon Burial in the Beaufort Sea (CarBBeau). DNR 2023-01384 **3.0 MSEK**
- 2023 – **Co-applicant.** VR project grant. PI Prof. Helen Coxall, Stockholm University. Arctic Ocean borealization during past warm climates. DNR: 2023-03792. **4.0 MSEK**
- 2023 – **Co-applicant.** BNP-Paribas Climate and Biodiversity Initiative. PI. Dr. Juhles Bennet, Alfred Wegener Institute, Potsdam, Germany. Fluxes from Land to Ocean: How Coastal Habitats in the Arctic Respond. **703,000 EURO (7.80 MSEK)**
- 2021 – **Principal investigator.** Swedish Research Council (VR) investment in existing infrastructure grant. An optimized national infrastructure for automated measurements and imaging of geological sediment cores and samples. DNR 2021-00374. **10.90 MSEK**
- 2020 – **Principal investigator.** VR project grant. Calibrating a million years of Arctic climate change using nanofossils and ancient DNA. DNR 2020-04379. **3.84 MSEK**
- 2020 – **Co-applicant.** Swedish Radiation Safety Authority. Along with Prof. Martin Jakobsson, Stockholm University. Seafloor terraces and semi-circular depressions and their potential relation to Submarine Groundwater Discharge. DNR SSM2020-2555. **3.37 MSEK**
- 2019 – **Co-applicant.** VR project grant. PI Prof. Helen Coxall, Stockholm University. Subpolar plankton invasions in the Arctic Ocean during past interglacials. DNR 2019-03757. **3.62 MSEK**
- 2018 – **Co-applicant.** ARICE – Arctic Research Icebreaker Consortium. PI Dr. Jorien Vonk, Vrije Universiteit Amsterdam. Permafrost Carbon in the Beaufort Sea - PeCaBeau. **Shiptime + 68,000 EURO (767 kSEK)**
- 2018 – **Principal investigator.** Anna-Greta and Holger Crafoord Foundation Stipend awarded by the Royal Swedish Academy of Sciences. Resolving a 3500-year record of Pacific water inflow to the Chukchi Sea and its link to Arctic multi-decadal climate variability. CR2018-0040. **158 kSEK**
- 2017 – **Principal investigator.** VR project grant. The late Quaternary chronology of Arctic Ocean sediments. DNR 2016-05092. **3.46 MSEK**
- 2015 – **Co-applicant.** VR project grant. PI. Prof. Ian Snowball, Uppsala University. High northern latitude palaeomagnetic signals in Quaternary sediments: cracking a conundrum. DNR 2014-4108. **3.2 MSEK**
- 2014 – **Co-applicant.** FORMAS project grant. PI. Prof. Ian Snowball, Uppsala University. Targeting emerging contaminated sediments along the uplifting northern Baltic coast of Sweden for remediation - TREASURE. DNR 214-2014-63. 2014-00063_Formas. **7.07 MSEK**
- 2013 – **Principal investigator.** VR junior researcher project grant. Physical and geothermal properties of Arctic Ocean sediments: Boundary conditions required for improved assessments of marine hydrate stability and dissociation. DNR 2012-3091. **2.80 MSEK**

- 2012 **Co-applicant.** VR Project research grant. PI. Dr. Richard Gyllencreutz, Stockholm University.
PAWS: Palaeoceanography of the Arctic -Water masses and Sea ice. 2011-05425-VR. **2.86 MSEK**

INTERNATIONAL ACTIVITIES

- 2018-26 Steering committee, **PalaeoArc** (Processes and Palaeoenvironments in the Arctic)
2022 Swedish Representative on ESSAC (European Science & Support & advisory Committee) for the European Consortium for Ocean Research Drilling (ECORD). Appointed by the Swedish Research Council (VR).
2019 Co-author (1 of 14) for the International Ocean Discovery Program's 2050 science framework: **Exploring Earth by Scientific Ocean Drilling**.
2013 European Consortium for Ocean Research Drilling representative on the *Science Evaluation Panel* (SEP) for the International Ocean Discovery Program. (2013-2015)
2009 Executive committee member (2009-2015) of the **Arctic in Rapid Transition**, an International Arctic Science Committee (IASC) sponsored research and training network.

ORGANIZATION OF SCIENTIFIC CONFERENCES/EVENTS (LAST FIVE YEARS)

- 2024 Lead organizer: *PalaeoArc*, May 2024, Stockholm University.
2022 Organizing committee: *Northeast Greenland: Unlocking records from sea to land*. Copenhagen, Denmark. A MagellanPlus workshop sponsored by ECORD.
2019 Organizing committee and convener: *Expanding frontiers of scientific ocean drilling*. Austrian Academy of Sciences, Vienna, Austria.

INVITED TALKS (LAST 5 YEARS)

- 2024 'Only time can tell – The Arctic cryosphere in Earth's paleoclimate system'. ArcSTRAT - Arctic Ocean Stratigraphic and Paleoclimate Conference. Keynote lecture. 22nd – 25th October 2024, UiT The Arctic University of Norway, Tromsø. Keynote Lecture
2023 'The Arctic's role in Earth's climate system on geological timescales'. Tongji University, Shanghai, China, December , 7, 2023. Invited lecture
2023 'Stratigraphy & chronology of Arctic Ocean sedimentary records - Problems and perspectives'. ECORD Summer School (ESS), From Greenhouse to Icehouse – The Cenozoic Arctic Ocean and (global) climate history. Bremen University, Sept. 04-15, 2023. Invited lecturer
2023 'A polar perspective on future mission specific platform drilling'. Workshop on the future of Scientific Ocean Drilling with Mission-Specific Platforms and Chikyu. A 3-day online workshop Organized by ECORD Science Support & Advisory Committee and Japan Drilling Earth Science Consortium. Jan. 17, 2022. Keynote speaker
2022 'Morris Jesup Rise: Drilling the Arctic Ocean Exit Gateway' MagellanPlus workshop, Northeast Greenland: Unlocking records from land to sea, Copenhagen, Denmark. Keynote speaker

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

PhD Students (current)

- 2025- **Megh Kanvinde**, Stockholm University, *Arctic Ocean borealization during past warm climates: signals from planktonic foraminifera*. Co-supervisor
2024- **Daniel Rudbäck**, University of Quebec, Rimouski, Canada, *Holocene paleosecular variation in Arctic Ocean sediments*. Co-supervisor
2024- **Romain Bompas**, University of Quebec, Rimouski, Canada, *Sedimentary dynamics and paleoceanography of the M'Clure Strait and Amundsen Gulf (Arctic Ocean) since the last deglaciation*. Co-supervisor
2024- **Katharina Schwarzkopf**, Stockholm University, *Carbon burial in the Canadian Beaufort Sea*. Main Supervisor
2024- **Blanda Matzenbacher**, Stockholm University, *Automated imaging and analysis of Arctic Ocean sediments*. Main Supervisor
2024- **Ylva Palmgren**, Stockholm University, *Holocene storminess in north and central Scandinavia*. Co-supervisor

2021- **Emelie Stahl**, Stockholm University, *Proxy-development using molecular genetic techniques on Arctic Ocean sediments*. Co-supervisor (since 2024)

PhD/Licentiate Students (completed)

2022 **Gabriel West**, Stockholm University. Ph.D defended January 2022. *A multi-method approach to dating Quaternary sediments from the Arctic Ocean*. Main supervisor
2020 **Steffen Weirs**, Uppsala University, Ph.D defended June 2020. *The Arctic Ocean Paleomagnetic Record: A stratigraphic approach*. Co-supervisor.
2016 **Pedro Preto**, Stockholm University. *Surface heat flow measurements in lake Vättern and along the continental slope of the East Siberian Sea*. Main Supervisor
2013 **Henrik Swärd**, Stockholm University. *In the wake of deglaciation – sedimentary signatures of ice-sheet decay and sea-level change*. Main supervisor.

Postdoctoral Researchers

2021- **Mohammad Razmjooie**, *Calcareous nannofossil biochronology of Arctic Ocean sediments*. Stockholm University. Main supervisor
2021-24 **Nia-Chen Chen**, *Submarine groundwater discharge in Baltic Sea*. Co-supervisor
2020-23 **Flor Vermassen**, *Arctic Ocean sea ice during the last interglacial*. Co-supervisor

APPOINTMENTS AS PHD EXAMINER

Opponent/Principal examiner (3); Committee member (1), Thesis disputation chair (1)

BIBLIOGRAPHIC SUMMARY

123 peer-reviewed papers (119) and book chapters (4). Citation summary: h-Index 42, i10-index 90. Google Scholar (accessed 01-10-22024).

<https://scholar.google.com/citations?user=rQP5E4EAAAAJ&hl=en>