

## Stephen R. Rintoul – Biographical Sketch

### A. Professional Preparation

Harvard University	Physics	A.B.	1982
MIT-WHOI	Physical Oceanography	Ph.D	1988
Post-doc at Princeton Univ.	Physical Oceanography,		1988-1990

### B. Appointments

2010 – pres.	Leader, Oceans Program, Antarctic Climate and Ecosystems Coop. Res. Centre
2009	Acting Chief, CSIRO Marine and Atmospheric Research
2007 – pres.	CSIRO Fellow
2003 – 2010	Leader, Climate Variability and Change Program, Antarctic Climate and Ecosystems Cooperative Research Centre
2004 – 2005	Theme Leader, Wealth from Oceans Flagship, CSIRO
2002 – 2007	Senior Principal Research Scientist, CSIRO Marine Research
2003 – 2004	Leader, Climate Research Group, CSIRO Marine Research
1997 – 2002	Principal Research Scientist, CSIRO Marine Research
1992-1997	Senior Research Scientist, CSIRO Division of Marine Research
1990-1992	Research Scientist, CSIRO Division of Oceanography
1988-1990	Postdoctoral Visiting Scientist, Princeton University

### C. Publications

#### Five publications related to the proposed project:

- Sallée, J. B., R. Matear, S. R. Rintoul and A. Lenton, 2011. Surface to interior pathways of anthropogenic CO<sub>2</sub> in the southern hemisphere oceans. *Nature Geoscience*, under review.
- Sallée, J.-B., K. Speer, S. R. Rintoul, 2010. Zonally asymmetric response of the Southern Ocean mixed-layer depth to climate variability. *Nature Geoscience*, 3, 273-279, <http://dx.doi.org/10.1038/ngeo812>.
- Sokolov, S. and S. R. Rintoul, 2007. Multiple jets of the Antarctic Circumpolar Current south of Australia. *Journal of Physical Oceanography*, 37, 1394-1412 [journals.ametsoc.org/doi/pdf/10.1175/JPO3111.1](http://journals.ametsoc.org/doi/pdf/10.1175/JPO3111.1)
- Sokolov, S. and S. R. Rintoul, 2007. On the relationship between fronts of the Antarctic Circumpolar Current and surface chlorophyll concentrations in the Southern Ocean. *J. Geophys. Res. – Oceans*, 112, C07030, <http://dx.doi.org/10.1029/2006JC004072>.
- Böning, C.W., A. Dispert, M. Visbeck, S. R. Rintoul, and F. Schwarzkopf, 2008. Response of the Antarctic Circumpolar Current to recent climate change. *Nature Geoscience*, 1, 864-869, <http://dx.doi.org/10.1038/ngeo362>.

#### Five other significant publications:

- Rintoul, S. R., C. Hughes and D. Olbers, 2001. The Antarctic Circumpolar Current System. In: *Ocean Circulation and Climate*, G. Siedler, J. Church, and J. Gould, (Eds.), Academic Press, 271-302.
- Sloyan, B. M. and S. R. Rintoul, 2001. The Southern Ocean limb of the global deep overturning circulation. *Journal of Physical Oceanography*, 31, 143-173, [http://dx.doi.org/10.1175/1520-0485\(2001\)031<0143:TSOLOT>2.0.CO;2](http://dx.doi.org/10.1175/1520-0485(2001)031<0143:TSOLOT>2.0.CO;2).
- Rintoul, S. R., 2007. Rapid freshening of Antarctic Bottom Water formed in the Indian and Pacific Oceans. *Geophysical Research Letters*, 34, L06606, <http://dx.doi.org/10.1029/2006GL028550>.
- Speer, K., S. R. Rintoul, and B. Sloyan, 2000. The diabatic Deacon cell. *Journal of Physical Oceanography*, 30, 3212-3222, [http://dx.doi.org/10.1175/1520-0485\(2000\)030<3212:TDDC>2.0.CO;2](http://dx.doi.org/10.1175/1520-0485(2000)030<3212:TDDC>2.0.CO;2).
- Rintoul, S. R., 1991. South Atlantic interbasin exchange. *Journal of Geophysical Research*, 96:2675-2692, <http://dx.doi.org/10.1038/386382a0>.

### D. Synergistic Activities

- Coordinating Lead Author, Observations: Oceans, Intergovernmental Panel on Climate Change 5<sup>th</sup> Assessment Report

- Southern Ocean Observing System (SOOS): Lead author and editor of the Initial Science and Implementation Strategy for the SOOS, and serve on the Science Advisory Committee for SOOS.
- Co-chaired the international panels responsible for coordinating each of the major field programs carried out in the Southern Ocean over the last two decades, including the WOCE and CLIVAR Southern Ocean panels, the Climate of Antarctica and the Southern Ocean program of the International Polar Year, and the SOOS.

## **E. Collaborators & Other Affiliations**

### **Collaborators and Co-Editors**

A. Allen (NA), N. Amezian (CNRS), C. Andrews-Phannkoch (J. Craig Venter Inst.), S. Aoki (Hokkaido), B. Averty (IFREMER), F. Bailleul (CNRS), R. Beaman (James Cook), S. Bengtson-Nash (Griffith), B. Best (Duke), N. Bindoff (Tasmania), M. Biuw (Norwegian Polar Instit.), L. Boehme (St Andrews), C. Bonin (IFM-GEOMAR), R. Bossi (Aarhus), C-A. Bost (CNRS), A. Bowie (Tasmania), M. Brown (New S. Wales), P. Burkhill (Plymouth), E. Butler (CSIRO), R. Causse (MNHN), R. Cavicchioli (New S. Wales), J.B. Charassin (CNRS), J. Church (CSIRO), R. Coleman (U. Berkeley), D. Cossa (IFREMER), D. Costa (UC-Santa Cruz), D. Crocker (UC-Santa Cruz), S. Cunningham (Southampton), M. De Santis (N/A), M. DeMaere (New S. Wales), A. Dettai (CNRS), A. Dispert (IFM-GEOMAR), G. Duhamel (MNHN), M. Eleaume (CNRS), M. England (New South Wales), E. Fahrbach (AWI), M. Fedak (St Andrews), I. Field (Charles Darwin), J. Fuhrman (USC), D. Fukai (Hokkaido), Y. Fukamachi (Hokkaido), B. Galton-Fenzi (Tasmania), S. Garzoli (NCAR), A. Goarant (U. Paris), M. Goebel (NCAR), H. Griffiths (NERC), N. Gruber (ETH), C. Guinet (CNRS), H. Hasumoto (OR), L. Heimbürger (IFREMER), G. Hemery (CNRS), C. Herbaut (U. Pierre et Maris Curie), M. Hindell (Tasmania), D. Hirano (Tokyo), T. Hirawake (Hokkaido), J. Hoffman (NA), G. Hosie (Australian Antarctic Div.), M. Houssais (U. Pierre et Maris Curie), P. Hulley (S. African Museum), T. Ishimaru (Tokyo), S. Jacobs (Columbia), C. Johnson (Tasmania), G. Johnson (NOAA/PMEL), T. Kagimoto (JAMSTEC), S. Kawaguchi (Australian Antarctic D.), N. Khare (M. E. Sci., India), A. Kortzinger (IFM-GEOMAR), T. Koslow (UCSD.), P. Koubbi (Paris), M. Lacarra (U. Pierre et Maris Curie), F. Lauro (New S. Wales), J. Le Sommer (Joseph Fourier), A. Lenton (Tasmania), M. Lipizer (Oregon State), P. Lovell (St Andrews), G. Madec (Pierre & Marie Curie), R. Massom (Australian Antarctic D.), R. Matear (CSIRO), B. McDonald (UC-Santa Cruz), C. McMahon (Charles Darwin), M. Meredith (British Antarctic Survey), H. Mitsudera (Hokkaido), J. Molines (Joseph Fourier), F. Monks (St. Andrews), M. Moteki (Tokyo), J. Nicholson (Valeport Ltd), R. O'Dor (Consortium for Ocean Leadership), P. Oke (CSIRO), K. Oshima (Hokkaido), C. Ozouf-Costaz (CNRS), Y-H. Park (MNHN), L. Petronic (OGS), L. Post (NA), A. Post (Geoscience Australia), P. Pruvost (MNHN), R. Ravindra (LVCE), T. Remenyi (Tasmania), M. Riddle (Australian Antarctic D.), K. Ridgway (CSIRO), B. Ronai (Australian Antarctic D.), F. Roquetn (MNHN), M. Rosenberg (Tasmania), J. Sallee (British Antarctic Sur.), J. Sarmiento (Princeton), Y. Sasai (JAMSTEC), H. Sasaki (JAMSTEC), A. Schiller (CSIRO), F. Schwarzkopf (IFM-GEOMAR), U. Send (UCSD), K. Shimada (Hokkaido), S. Sokolov (CSIRO), K. Speer (Florida State), I. Staniland (NERC), E. Sultan (U. Pierre et Maris Curie), T. Tamura (Hokkaido), E. Tevernier (ULCO), T. Thomas (New S. Wales), S. Thorpe (British Antarctic S.), M. Tierney (Australian Antarctic D.), R. Timmermann (AWI), A. Treguier (CNRS), Y. Tremblay (UC-Santa Cruz), K. Trenberth (NCAR), J. Turner (British Antarctic S.), S. Ushio (NIPR), J. van den Hoff (Australian Antarctic D.), E. van Wijk (Australian Antarctic D.), M. Visbeck (IFM-GEOMAR), V. Wadley (Australian Antarctic D), M. Wakatsuchi (Hokkaido), N. Wardell (NA), R. Watson (CNRS), S. Wijffels (CSIRO), D. Wilkins (NA).

**Graduate Advisors and Postdoctoral Sponsors.** PhD advisor: C. Wunsch (MIT). Postdoctoral Sponsor: J. Sarmiento (Princeton).

**PhD students supervised (Total =7):** B. Sloyan (CSIRO), H. Phillips (Tasmania), G. Williams (Australian Antarctic Div.), K. Hill (Australian Integrated Marine Observing Sys.), A. Meijers (CSIRO), L. Herraiz-Borreguero (Australian Antarctic Div.), S. Downes (Australian National U.). **Current PhD students (Total =3):** C. Chapman (Australian National U.), C. Roach (Tasmania), R. Stevens (Tasmania). **Postdoctoral Scholars supervised (Total = 4):** J.B. Sallée (British Antarctic Survey), A. Meijers (CSIRO), S. Bestley (CSIRO), B. Peña-Molino (ACE CRC).