

Monday 4th December

08:00 Exhibitor set up begins

09:00 REGISTRATION OPENS (coffee meet & greet)

10:30 Welcome to Country

10:35 **David Suggett:** Open Meeting and Housekeeping10:45 **Ondrej Prášil:** Introducing the AQUAFLUO concept and transition to AQUAFLUO II**Session 1: Advances in approach, protocols & parameterization I** Mediator: **David Suggett**11:00 **Paul Falkowski (Plenary):** Using chlorophyll fluorescence to close the energy budget of photosynthesis in the oceans11:45 **Kevin Oxborough:** The integration of Single Turnover Active Fluorometry within Marine Autonomous Systems could allow for estimation of primary productivity by phytoplankton over extremely wide spatiotemporal scales
Atsuko Kanazawa: HyperspeQ – Aquatic version: A PhotosynQ-capable, hand-held hyperspectral spectrometer for assessing photosynthesis and health of algae, corals and sea grasses12:15 **Maxim Gorbunov:** Development and applications of picosecond fluorescence lifetime analysis in the ocean

12:30 Discussion Session 1

13:00 LUNCH BREAK**Session 2: Advances in approach, protocols & parameterization II** Mediator: **Ondrej Prášil**14:00 **Sam Laney:** New frameworks for representing the dynamics of the fluorescence-irradiance relationship14:15 **Zbigniew Kolber:** Spectrally-resolved photosynthetic signatures of marine phytoplankton14:30 **Charlotte Robinson:** Spatial variability in the photophysiological response of phytoplankton throughout world oceans using an instantaneous light curve (ILC) method14:45 **Werner Eckert:** In situ delayed fluorescence decay kinetics as a proxy for phytoplankton productivity in Lake Kinneret

15:00 Discussion Session 2

15:30 AFTERNOON TEA BREAK**Afternoon Workshops (WS) – See E-proceedings for details**

	WS1	WS2	WS3	WS4	WS5	WS6
16:00	Group A	Group B	Group C	Group D	Group E	Group F
17:00	Group B	Group A	Group D	Group C	Group F	Group E

16:00 Group A .Group B .Group C .Group D .Group E Group F

17:00 Group B Group A Group D Group C Group F Group E

18:00 EVENING MIXER OVER POSTERS Aerial Function Centre**Tuesday 5th December****Session 3: Fluorescence & physiological functioning** Mediator: **Doug Campbell**09:00 **Antonietta Quigg (Plenary):** Connecting physiology and fluorescence: challenges, pitfalls and progress09:45 **Bernard Lepetit:** Lhcx knockout mutants of *Phaeodactylum tricornutum* provide unexpected insights into the regulation of photoprotection in diatoms10:00 **Doug Campbell:** Fluorescence & physiological functioning: Phytoplankton σ P_{II} and YNPQ10:15 **Rupert Perkins:** Rapid up-regulation of electron transport rate and excitation dissipation in *Haslea* “blue” diatoms

10:30 Discussion Session 3

11:00 MORNING COFFEE BREAK & POSTERS**Session 4: Fluorescence and productivity I: Tracking electron flow** Mediator: **David Suggett**11:30 **Kim Halsey:** Progress and new approaches in accounting for energy conversion into biomass11:45 **Imre Vass:** A fluorescence wave phenomenon reflects the interaction of photosynthetic and respiratory electron transport in Symbiodinium12:00 **Milan Szabó:** Integrating methods of chlorophyll fluorescence and absorbance kinetics to characterise photosynthesis in microalgae12:15 **Tony Larkum:** Cyclic electron flow in chromist algae and its significance12:30 **Kunshan Gao:** Application of fluorescence techniques for CO₂-related physiology studies12:45 **Ondrej Prášil:** The effect of dynamic nutrient stress on the fluorescence- based estimation of primary productivity in a marine diatom**13:00 LUNCH BREAK Women in Science Lunch****Session 5: Fluorescence and productivity II: Retrieving carbon uptake** Mediator: **Kim Halsey**14:00 **Nina Schuback:** Linking FRRF derived Photo-physiology with Carbon-based Primary Productivity14:15 **David Hughes:** Nitrogen availability as a driver of variability of the electron requirement for carbon fixation in Australian coastal waters14:30 **Andres Gutierrez-Rodriguez:** Photosynthetic electron transport and carbon fixation rates across contrasting subtropical and subantarctic open-ocean waters east of New Zealand14:45 **Jacco Kromkamp:** FRRF as tool to measure phytoplankton primary production

15:00 Discussion Session 4-5

15:30 AFTERNOON TEA BREAK & POSTERS**Afternoon Workshops (WS) – See E-proceedings for details**

	WS1	WS2	WS3	WS4	WS5	WS6
16:00	Group C	Group D	Group E	Group F	Group A	Group B
17:00	Group D	Group C	Group F	Group E	Group B	Group A

16:00 Group C .Group D Group E Group F Group A .Group B

17:00 Group D Group C Group F Group E Group B Group A

18:00 SAUSAGE SIZZLE Alumni Green**Wednesday 6th December** REST DAY**Thursday 7th December****Session 6: Scaling assessment through sensor technology & novel platforms I** Mediator: **Sam Laney**09:00 **Michael Behrenfeld (Plenary):** Informing global evaluations of phytoplankton ecophysiology through observations of chlorophyll fluorescence properties09:45 **Emma Bone:** A novel approach to interpreting fluorescence quantum yield variability in the Southern Ocean10:00 **Joan Lloret:** Decadal changes in phytoplankton phenology in the Tasman Sea10:15 **Vona Méléder:** Radiometry vs. fluorometry: the use of hyperspectral reflectance to retrieve photosynthetic parameters from algal biofilms

10:30 Discussion Session 6

11:00 MORNING COFFEE BREAK & POSTERS**Session 7: Scaling assessment through sensor technology & novel platforms II** Mediator: **Ondrej Prášil**11:30 **Tetsuichi Fujiki:** Development of a Fast Repetition Rate fluorometer for autonomous ocean observation platforms11:45 **Sandy Thomalla:** An optimised method for correcting fluorescence quenching using optical backscattering on autonomous platforms12:00 **Rikuya Kurita:** Spatial and Temporal Discrimination of the Pigment-based Phytoplankton Community derived from Spectral Fluorescence Signatures12:15 **Kenneth Hoadley:** Using high frequency FRRF measurements to characterize the response to elevated CO₂ and nitrate limitation across two functionally distinct *Micromonas* species

12:30 Discussion Session 7

13:00 LUNCH BREAK**Session 8: Scaling assessment through sensor technology & novel platforms III** Mediator: **Jacco Kromkamp**14:00 **João Seródio:** Multi-Actinic Imaging of chlorophyll fluorescence: a tool for the integrated characterization of photosynthetic traits and light stress responses14:15 **Anya Salih:** Microstructural and spectral responses of symbionts in coral tissues with varying fluorescent pigmentation in response to light and thermal stress14:30 **Michael Kühn:** Light sheet microscopy imaging of light absorption and photosynthesis distribution in plant tissue14:45 **Bruno Jesus:** Single-cell analysis of species-specific photo-regulation and photo-acclimation status of microphytobenthic diatoms

15:00 Discussion Session 8

15:30 AFTERNOON TEA BREAK & POSTERS**Afternoon Workshops (WS) – See E-proceedings for details**

	WS1	WS2	WS3	WS4	WS5	WS6
16:00	Group E	Group F	Group A	Group B	Group C	Group D
17:00	Group F	Group E	Group B	Group A	Group D	Group C

16:00 Group E Group F Group A Group B Group C Group D

17:00 Group F Group E Group B Group A Group D Group C

19:00 CONFERENCE DINNER at L'AQUA Cockle Bay Wharf**Friday 8th December**

09:00 Pacific User Group Forum (Aerial Centre location TBC)

09:00 C3 tour (**must be registered**)09:30 Data Arena Tour (**must be registered**)**10:00 MORNING COFFEE BREAK & POSTERS****Session 9: Chlorophyll fluorescence for the next decade: Organism and ecosystem applications** Mediator: **Tetsuichi Fujiki**10:30 **Mark Warner:** Teasing apart the complexity of chlorophyll a fluorescence in Coral Reef Research: Discoveries and Future Challenges10:45 **Tom Bibby:** Understanding fluorescence based diagnosis of open ocean iron limitation11:00 **Sónia Cruz:** Studying kleptoplasty in animal cells using chlorophyll a fluorescence11:15 **Sven Beer:** Twenty years of work with the Diving-PAM: Benefits earned and lessons learned

11:30 Discussion Session 9

12:00 LUNCH BREAK**Session 10: Chlorophyll fluorescence for the next decade: Industry applications** Mediator: **Peter Ralph**13:00 **David Kramer (Plenary):** Probing photosynthetic regulatory paradigms in the context of environments13:45 **Kevin Oxborough:** Variable fluorescence and the Poisson distribution – how to count phytoplankton cells within ballast water discharge14:00 **Sara Khan:** Quantifying cyanobacterial/algal communities using spectral fluorescence at an extended wavelength-direction to future fluorometers14:15 **Marc Long:** A rapid quantitative fluorescence-based bioassay to study allelopathy from *Alexandrium* sp.14:30 **Christian Moldaenke:** The identification of the fluorometrical fingerprints of “free and unbound phycocyanin” and it’s use for detecting cyanobacteria cell lysis and release of algal toxins and T&O compounds caused by per-oxidants in drinking water treatment plants14:45 **Michael Borowitzka:** Monitoring and control system(s) for commercial-scale microalgae culture

15:00 Discussion Session 10

15:30 AFTERNOON TEA BREAK & POSTERS16:00 **Peter Ralph** Over the sensor horizon: what are opportunities in the next 10 years?16:30 **David Suggett & Ondrej Prášil** Meeting closure