

THE J. FREDERICK GRASSLE SCIENCE SYMPOSIUM ON THE CENSUS OF MARINE LIFE

The Royal Society
London, United Kingdom
5–6 October 2010



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SYMPOSIUM PROGRAM

Tuesday, 5 October

8:00-8:30	<i>Registration, Coffee, and Set-up of Posters</i>
8:30-8:35	<i>Introduction (Ian Poiner)</i>
8:35-8:45	<i>Reflections on Fred Grassle's Career and the Census (Paul Snelgrove)</i>
8:45-9:00	<i>Welcome from the Royal Society</i>
9:00-9:10	<i>An SSC Perspective (Patricio Bernal)</i>
	The Projects, part 1 (Moderator: Poul Holm) <i>Ten-minute presentations, followed by up to five minutes for questions.</i>
9:10-9:25	<i>Oceans Past: HMAP (Poul Holm)</i>
9:25-9:40	<i>Near Shore: NaGISA (Katrin Iken)</i>
9:40-9:55	<i>Coral Reefs: CReefs (Nancy Knowlton)</i>
9:55-10:10	<i>Vents and Seeps: ChEss (Paul Tyler)</i>
10:10-10:25	<i>Seamounts: CenSeam (Malcolm Clark)</i>

10:25-10:55 *Break (Showing of videos from the Projects and NRICs – see Video Schedule page 13)*

The Projects, part 2 (Moderator: Myriam Sibuet)

Ten-minute presentations, followed by up to five minutes for questions.

10:55-11:10 *Continental Margins: COMARGE (Bob Carney)*

11:10-11:25 *Mid-Atlantic Ridge: MARECO (Odd Aksel Bergstad and Tone Falkenhaus)*

11:25-11:40 *Abyssal Plains: CeDAMar (Pedro Martinez)*

Synthesis Across Projects (Moderator: Paul Snelgrove)

Ten-minute presentations, followed by up to five minutes for questions.

11:40-11:50 *A Synthesis of the Census (Paul Snelgrove)*

11:50-12:05 *Global Patterns and Predictors of Marine Biodiversity Across Taxa (Derek Tittensor)*

12:05-12:20 *Marine Barcoding and Species Relatedness (Dirk Steinke)*

12:20-12:35 *SYNDEEP: New Results from Integrated Deep-sea Studies (Eva Ramirez-Llodra)*

12:35-12:50 *Global Patterns and Predictions of Seafloor Biomass (Chih-Lin Wei)*

12:50-13:50 *Lunch (Showing of videos from the Projects and NRICs – see Video Schedule page 13)*

13:50-14:00 *An SSC Perspective (Yoshihisa Shirayama)*

	The Projects, part 3 (Moderator: Yoshihisa Shirayama) <i>Ten-minute presentations, followed by up to five minutes for questions.</i>
14:00-14:15	<i>Regional Ecosystems: GoMA</i> (Lew Incze)
14:15-14:30	<i>Continental Shelves: POST</i> (John Payne)
14:30-14:45	<i>Top Predators: TOPP</i> (Barbara Block)
14:45-15:00	<i>Zooplankton: CMarZ</i> (Ann Bucklin)
15:00-15:15	<i>Microbes: ICoMM</i> (Mitchell Sogin)
15:15-15:30	<i>Arctic: ArcOD</i> (Rolf Gradinger)
15:30-15:45	<i>Antarctic: CAML</i> (Stefano Schiaparelli)
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15:45-16:15	<i>Break (Showing of videos from the Projects and NRICs – see Video Schedule page 13)</i>
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	The Projects, part 4 (Moderator: Ian Poiner) <i>Ten-minute presentations, followed by up to five minutes for questions.</i>
16:15-16:30	<i>Oceans Future: FMAP</i> (Heike Lotze)
16:30-16:45	<i>Global Marine Life Database: OBIS</i> (Edward Vanden Berghe)
16:45-17:00	<i>Mapping & Visualization</i> (Pat Halpin)
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17:00-17:25	<i>Open Discussion</i> (Moderator: Ian Poiner)
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17:25-17:30	<i>Concluding Remarks for the Day</i> (Ian Poiner)
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17:30-18:00	<i>Poster Session (Marble Hall/City of London Rooms—see Poster Titles and Authors, page 16)</i>
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Wednesday, 6 October

8:00-8:30	<i>Registration and Coffee</i>
8:30-8:45	<i>Introduction (Ian Poiner)</i>
8:45-8:55	<i>An SSC Perspective (Meryl Williams)</i>
	The National & Regional Committees, part 1 (Moderator: Meryl Williams) <i>Ten-minute presentations, followed by up to five minutes for questions.</i>
8:55-9:10	<i>Sub-Saharan Africa (Charles Griffiths)</i>
9:10-9:25	<i>Australia (Nic Bax)</i>
9:25-9:40	<i>Indian Ocean (Dorairajasingam Chandramohan)</i>
9:40-9:55	<i>China (Chaolun Li)</i>
9:55-10:10	<i>Japan (Katsunori Fujikura)</i>
10:10-10:40	<i>Break (Showing of videos from the Projects and NRICs – see Video Schedule page 13)</i>
	The National & Regional Committees, part 2 (Moderator: Ron O’Dor) <i>Ten-minute presentations, followed by up to five minutes for questions.</i>
10:40-10:55	<i>Korea (Youn-Ho Lee)</i>
10:55-11:10	<i>Indonesia (Tonny Wagey)</i>
11:10-11:25	<i>Arabian Sea (Nick D’Adamo)</i>
11:25-11:40	<i>Europe (Henn Ojaveer)</i>

The National & Regional Committees, part 2 (continued)

Ten-minute presentations, followed by up to five minutes for questions.

11:40-11:55 Canada (Philippe Archambault)

11:55-12:10 United States (Wes Tunnell)

12:10-13:10 Lunch (Showing of videos from the Projects and NRICs – see Video Schedule page 13)

The National & Regional Committees, part 3 (Moderator: Patricia Miloslavich)

Ten-minute presentations, followed by up to five minutes for questions.

13:10-13:25 Caribbean (Patricia Miloslavich)

13:25-13:40 South America (Diego Rodriguez)

13:40-13:55 Synthesis across the NRIC Papers (Mark Costello)

Observational Powers of Art & Science, part 1 (Moderator: Jesse Ausubel)

Ten-minute presentations.

13:55-14:05 Sculpture (Anne Berg Evardsen)

14:05-14:15 Painting (Lily Simonson)

14:15-14:25 Cartoons (Jim Toomey)

14:25-14:35 Film (François Sarano)

14:35-15:10 Break (Showing of videos from the Projects and NRICs – see Video Schedule page 13)

	Observational Powers of Art & Science, part 2 (Moderator: Jesse Ausubel)
15:10-15:15	<i>Musical Performance by Rockegården</i> (Steffen Flasnes, Maylen Rusti, Kristian Tybakken)
15:15-15:30	<i>Open Discussion and Q & A</i>

15:30-16:00	<i>Concluding Remarks and Thank You to the Census Community</i> (Ian Poiner)
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16:00-16:30	<i>Poster Session (Marble Hall/City of London Rooms—see Poster Titles and Authors, page 16)</i>
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Reminders:

BOOKSIGNING: *Paul Snelgrove and Nancy Knowlton will be on hand periodically throughout the breaks and lunches on Tuesday and Wednesday to sign “Discoveries of the Census of Marine Life” and “Citizens of the Sea.”*

POSTERS: *All posters must be removed from the Royal Society prior to departure on Wednesday.*

BANNERS: *Please ensure that each Project’s designated person collects their retractable banner at the end of the day on Wednesday. Sturdy carrying cases are provided for transporting the banner back to your home institution as checked luggage.*

CELEBRATION: *The Census of Marine Life Celebration at the London Museum of Natural History (Cromwell Road, London SW7 5BD) begins promptly at 7:30 pm and concludes at midnight. Please bring your nametag as your entry pass to the Museum. Accompanying guests should bring a copy of the invitation you received via email. Buffet dinner, wine, beer, and toasting beverages will be served.*

PRESENTERS AND MODERATORS

Philippe Archambault, Université du Québec à Rimouski, Institut des sciences de la mer, Canada
Jesse Ausubel, The Rockefeller University and Alfred P. Sloan Foundation, USA
Nic Bax, Commonwealth Scientific and Industrial Research Organisation, Australia
Patricio Bernal, IUCN Global Marine Programme, Global Ocean Biodiversity Initiative, Switzerland
Odd Aksel Bergstad, Institute of Marine Research, Flødevigen Marine Research Station, Norway
Barbara Block, Stanford University, Department of Biological Sciences, Hopkins Marine Station, USA
Ann Bucklin, University of Connecticut - Avery Point, Department of Marine Sciences, USA
Bob Carney, Louisiana State University, Coastal Ecology Institute, USA
Dorairajasingam Chandramohan, National Institute of Oceanography (retired), India
Malcolm Clark, National Institute of Water and Atmospheric Research, New Zealand
Mark Costello, University of Auckland, Leigh Marine Laboratory, New Zealand
Nick D'Adamo, UNESCO Intergovernmental Oceanographic Commission, Australia
Anne Berg Edvardsen, Sculptor, Norway
Tone Falkenhaus, Institute of Marine Research, Flødevigen Marine Research Station, Norway
Steffen Flasnes, Rockegården, Norway
Katsunori Fujikura, Japan Agency for Marine-Earth Science and Technology, Japan
Rolf Gradinger, University of Alaska Fairbanks, School of Fisheries and Ocean Sciences, USA
Charles Griffiths, University of Cape Town, Department of Zoology, South Africa
Pat Halpin, Duke University, Nicholas School of the Environment and Earth Sciences, USA
Poul Holm, Trinity College Dublin, Trinity Long Room Hub, Ireland
Katrin Iken, University of Alaska Fairbanks, School of Fisheries and Ocean Sciences, USA
Lew Incze, University of Southern Maine, Aquatic Systems Group, USA
Nancy Knowlton, Smithsonian Institution, National Museum of Natural History, USA
Youn-Ho Lee, Korea Ocean Research & Development Institute, Marine Living Resources Research Division, Korea
Chaolun Li, Institute of Oceanology, Chinese Academy of Sciences, China

Heike Lotze, Dalhousie University, Department of Biology, Canada
Pedro Martinez, Forschungsinstitut Senckenberg, Deutsches Zentrum für Marine Biodiversitätsforschung, Germany
Patricia Miloslavich, Universidad Simón Bolívar, Departamento de Estudios Ambientales, Venezuela
Ron O'Dor, Consortium for Ocean Leadership, USA and Dalhousie University, Canada
Henn Ojaveer, University of Tartu, Estonian Marine Institute, Estonia
John Payne, Pacific Ocean Shelf Tracking Project, USA
Ian Poiner, Australian Institute of Marine Science, Australia
Diego Rodriguez, Universidad Nacional de Mar del Plata, Departamento de Ciencias Marinas, Argentina
Eva Ramirez-Llodra, Institut de Ciències del Mar, Spain
Maylen Rusti, Rockegården, Norway
François Sarano, Galatée Films, France
Stefano Schiaparelli, Università di Genova, Dipartimento per lo studio del Territorio e delle sue Risorse, Italy
Yoshihisa Shirayama, Kyoto University, Field Science Education and Research Center, Japan
Myriam Sibuet, Institut Océanographique Foundation Albert 1er, France
Lily Simonson, Contemporary Artist, USA
Paul Snelgrove, Memorial University of Newfoundland, Ocean Science Centre, Canada
Mitchell Sogin, The Marine Biological Laboratory at Woods Hole, USA
Dirk Steinke, University of Guelph, Biodiversity Institute of Ontario, Canada
Derek Tittensor, Dalhousie University, Department of Biology, Canada
Jim Toomey, Cartoonist, USA
Wes Tunnell, Texas A&M University - Corpus Christi, Harte Research Institute for Gulf of Mexico Studies, USA
Kristian Tybakken, Rockegården, Norway
Paul Tyler, University of Southampton, National Oceanography Centre, Southampton, United Kingdom
Edward Vanden Berghe, Rutgers University, Institute of Marine and Coastal Sciences, USA
Tonny Wagey, Agency for Marine and Fisheries Research, Indonesia
Chih-Lin Wei, Texas A&M University at Galveston, USA
Meryl Williams, Asian Fisheries Society, Australia/Malaysia

GROUP PHOTO SCHEDULE

Please report to the stairs in the Lobby area FIVE minutes before your scheduled group photo time.

Tuesday, 5 October

Break (10:25-10:55)

10:30 HMAP
10:35 NaGISA
10:40 CReefs
10:45 ChEss

Lunch (12:50-13:50)

13:10 CenSeam
13:15 COMARGE
13:20 MAR-ECO
13:25 CeDAMar
13:30 GoMA
13:35 POST
13:40 TOPP

Break (15:45-16:15)

15:50 CMarZ
15:55 ICoMM
16:00 ArcOD
16:05 CAML

Wednesday, 6 October

Break (10:10-10:40)

10:15 FMAP
10:20 OBIS
10:25 Synthesis Group
10:30 South America
10:35 Sub-Saharan Africa

Lunch (12:10-13:10)

12:30 Australia
12:35 Indian Ocean
12:40 China
12:45 Japan
12:50 Indonesia
12:55 Korea
13:00 Europe

Break (14:35-15:10)

14:40 Canada
14:45 USA
14:50 Caribbean
14:55 Arabian Sea

VIDEO PRESENTATION SCHEDULE

Videos presented simultaneously during breaks and lunch in the Wellcome Trust Lecture Hall and Kohn Centre.

Note: times approximate and subject to change.

Tuesday, 5 October

Break (10:25-10:55)

- 10:30 ArcOD (4:25)
- 10:35 CAML (8:45)
- 10:44 CeDAMar (2:43)
- 10:47 POST (3:40)

Lunch (12:50-13:50)

- 12:52 CenSeam (6:30)
- 12:59 CMarZ (5:00)
- 13:04 CReefs (8:50)
- 13:13 GoMA (5:20)
- 13:18 ICoMM (0:10)
- 13:18 NaGISA (9:50)
- 13:28 MAR-ECO (6:45)
- 13:35 ChEss (2:46)
- 13:38 HMAP (4:45)

Break (15:45-16:15)

- 15:48 Canada (5:00)
- 15:53 EuroCoML (5:20)
- 15:58 Australia (5:00)
- 16:03 TOPP (1:45)
- 16:05 Ocean Habitats (2:21)

Wednesday, 6 October

Break (10:10-10:40)

- 10:12 GoMA (5:20)
- 10:17 Ocean Habitats (2:21)
- 10:19 CMarZ (5:00)
- 10:24 ICoMM (0:10)
- 10:24 POST (3:40)

Lunch (12:10-13:10)

- 12:12 CAML (8:45)
- 12:21 ArcOD (4:25)
- 12:25 CeDAMar (2:43)
- 12:27 Canada (5:00)
- 12:32 EuroCoML (5:20)
- 12:37 Australia (5:00)
- 12:42 TOPP (1:45)
- 12:44 CenSeam (6:30)
- 12:51 CReefs (8:50)

Break (14:35-15:10)

- 14:38 ChEss (2:46)
- 14:41 NaGISA (9:50)
- 14:51 HMAP (4:45)
- 14:56 MAR-ECO (6:45)

VIDEOS

ArcOD: Arctic Ocean Diversity

Credits: Rolf Gradinger, University of Alaska Fairbanks; thanks to NOAA, NSF, Sloan Foundation

Australia: Deep Reef Biodiversity – Tasman Fracture Zone

Credits: Woods Hole Advanced Imaging and Visualization Laboratory, CERF Marine Biodiversity Hub, CSIRO Wealth from Oceans Flagship, CSIRO Climate Adaptation Flagship, National Science Foundation

CAML: Oceans of Ice

Credits: Peter Morse, Julia Gibson, Victoria Wadley

Canada: Before the Ice Melts – CoML Canada

Credits: Dr. S. Kim Juniper, Maéva Gauthier

CeDAMar: Cookie Cutters in the Deep Sea

Credits: Senckenberg Institute

CenSeam: CenSeam—A Global Census of Marine Life on Seamounts

Credits: Video courtesy of New Zealand's National Institute of Water & Atmospheric Research, Land Information New Zealand, Ministry of Fisheries, Foundation for Research Science and Technology. Edited and compiled by Peter (Chazz) Marriott, Peter Hill and Mireille Consalvey. Footage collected by the Deep Towed Imaging System (DTIS). Deployment filmed by Mireille Consalvey. © NIWA 2010

Census of Marine Life: Ocean Habitats

Credits: Randy Kochevar and National Geographic Television/Digital Studio

ChEss: ChEss in the Southern Ocean – “ChEsSo” Expeditions

Credits: Edited by Jon Copley

CMarZ: Census of Marine Zooplankton

Credits: L. Madin, Woods Hole Oceanographic Institution, D. Lindsay, Japan Agency for Marine-Earth Science and Technology

CReefs: Hermit Crabs!

Credits: Produced by Susan Middleton, Directed and Edited by Leonard Feinstein, Courtesy of CReefs and NOAA PIFSC CRED, 2010

EuroCoML: Exploring the Ocean Depths

Credits: Created by Blueprint Animation in conjunction with the European Census of Marine Life (EuroCoML) and the Biogeography of Deep-water Chemosynthetic Ecosystems (ChEss). Funded and supported by Foundation TOTAL and the Census of Marine Life.

GoMA: Exploring Biodiversity in the Gulf of Maine

Credits: GoMA Census, Produced by Rick Morris, r.e.m. films; Written by Susan Ryan, University of Southern Maine

HMAP: History of Marine Populations

Credits: Producer and videographer, Kira Paulli Pravato; Narrator, Gustav Paulli Pravato

ICoMM: Fly Into Lost City

Credits: ICoMM/University of Washington

MAR-ECO: Mid Atlantic Ridge Ecology – ROV ISIS Observations

Credits: David Shale, Steve Nicholls, Films at 59

NaGISA: NaGISA Sampling at Arrival Heights

Credits: Henry Kaiser, videographer, producer

POST: Post in 2010 – A Retrospective Look

Credits: 2010 POST/Vancouver Aquarium

TOPP: TOPP—Tagging of Pacific Predators

Credits: Tagging of Pacific Predators ©TOPP 2010

POSTERS

Posters are presented at the end of each day in the noted locations. Poster abstracts are featured at www.coml.org and on the USB drives. All participants are requested to take their posters and Project banners with them at the conclusion of the Poster Session on Wednesday.

MARBLE HALL:

- A1 **CeDAMAR** Abyssal Plains—from quiescent, lifeless deserts to dynamic hotspots of biodiversity and sensors for climate change—*B. Ebbe with S. Keller, P. Martinez Arbizu, and C. Smith*
- A2 **Cross-Project** Exploring the role of environmental variables in shaping patterns of biodiversity composition in seabed assemblages—*C. Roland Pitcher with Peter Lawton, Nick Ellis, Stephen J. Smith, Lewis S. Incze, Chih-Lin Wei, Michelle E. Greenlaw, Nicholas H. Wolff, Jessica A. Sameoto, Paul V.R. Snelgrove*
- A3 **Cross-Project** Global Patterns and Predictions of Seafloor Biomass—*Chih-Lin Wei with Gilbert T. Rowe, Elva Escobar-Briones, Antje Boetius, Thomas Soltwedel, Julian Caley, Falk Huettmann, Fangyuan Qu, Zishan Yu, Mary K. Wicksten, Jeffrey G. Baguley, Michael A. Rex, Jyotsna Sharma, Yousria Soliman, Roberto Danovaro, Clifton C. Nunnally, Jody W. Deming, Ian R. MacDonald, Mélanie Lévesque, Jan Marcin Weslawski, Maria Wlodarska-Kowalczyk, Baban S. Ingole, Brian J. Bett, Bodil A. Bluhm, Katrin Iken, Bhavani E Narayanaswamy, Paul Montagna*
- A4 **FMAPTOPP** Statistical methods for synthesizing the world's largest tracking dataset—*Arliss J. Winship with Ian D. Jonsen, Salvador Jorgensen, Greg A. Breed, Autumn-Lynn Harrison, James E. Ganong, Scott A. Shaffer, Dan P. Costa, Barbara A. Block*
- A5 **NaGISA-FMAP** Spatial homogenization of species richness in marine ecosystems—*L. Benedetti-Cecchi with L. Tamburello, C. Mora, H. K. Lotze, K. Iken, B. Worm, J. J. Cruz-Motta, B. Konar, I. Bertocci, A.L. Schmidt, L. Airoidi, C. Blanchette, B. Best, M. Burrows, S. Fraschetti, P. Raimondi, J. Roberts, D. Schiel, A. Terlizzi, K. I. Ugland, E. Wieters*
- A6 **FMAP** Global Marine Species Diversity (a) and Richness (b): Patterns and Predictors—*Derek P. Tittensor, (Part A) and Philippe Bouchet, (Part B) with Camilo Mora, Walter Jetz, Heike K. Lotze, Daniel Ricard, Edward Van den Bergh, Boris Worm, Geoff Boxshall, Terry Erwin, Benoit Fontaine*
- A7 **FMAP** The Future of Marine Animal Populations Project—*Boris Worm with Heike K. Lotze, Ian Jonsen, Derek Tittensor, Camilo Mora, Marta Coll, Arliss Winship, Catherine Muir*

- A8 HMAP History of Marine Animal Populations: Stories on Marine Animal Populations and their Exploitation—*Kira Paulli Pravato with Anne Husum Marboe, Poul Holm*
- A9 HMAP Measuring the Regional Effect of 19th C American Offshore Whaling Voyages—*Tim D. Smith with Randall Reeves*
- A10 Cross-Project Global marine biogeographic analysis using data published through the Ocean Biogeographic Information System—*Mark Costello with Peter Tsai, Pui Shan Wong, Alan Cheung, Mark Gibbons, Annelies Pierrot, Les Watling*
- B1 CeDAMar A decade of discovery on abyssal plains of the world's oceans. What we have learned about the largest ecosystem on Earth—*B. Ebbe with S. Keller, P. Martinez Arbizu, and C. Smith*
- B2 CenSeam A Global Census of Marine Life on Seamounts (CenSeam)—*CenSeam Science Community*
- B3 CenSeam Fact, fiction, and the future: a synthesis of seamount ecological paradigms—*CenSeam Science Community*
- B4 CenSeam The impacts of human activities on seamounts: low resilience of biota to trawling and mining—*CenSeam Science Community*
- B5 ChEss ChEss – Biogeography of Chemosynthetic Ecosystems in the Deep—*Maria C. Baker with Eva Z. Ramirez-Llodra, Paul A. Tyler, Christopher R. German, and 22 members of the ChEss SSC*
- B6 ChEss ChEss – New Discoveries around the Globe—*Maria C. Baker with Eva Z. Ramirez-Llodra, Paul A. Tyler, Christopher R. German, and 22 members of the ChEss SSC*
- B7 ChEss ChEss – Education and Outreach (Education Supplement)—*Maria C. Baker with Eva Z. Ramirez-Llodra, Paul A. Tyler, Christopher R. German, and 22 members of the ChEss SSC*
- B8 COMARGE Continental Margin Ecosystems on a worldwide scale – II. Large-scale distribution and diversity patterns revisited along continental slopes—*R. Carney with Menot L., Billet D.S.M, Galéron J., Ingole B., Kitazato H., Krylova E., Levin L., Poore G., Lavrado, H. P., Rowe G., Sellanes J., Vanreusel A and Sibuet M.*

- B9 COMARGE Continental Margin Ecosystems on a worldwide scale - III. Influence of the newly perceived habitat heterogeneity on biodiversity—*L. Levin with Menot L., Billet D.S.M, Carney, R., Galéron J., Ingole B., Kitazato H., Krylova E., Poore G., Lavrado, H. P., Rowe G., Sellanes J., Vanreusel A. and Sibuet M.*
- B10 COMARGE Continental Margin Ecosystems on a worldwide scale - I. Species rich, complex and fragile deep-sea landscapes within human reach—*M. Sibuet with Menot L., Billet D.S.M, Carney, R., Galéron J., Ingole B., Kitazato H., Krylova E., Levin L., Poore G., Lavrado, H. P., Rowe G., Sellanes J., Vanreusel A.*
- C1 MAR-ECO North Atlantic Mid-Ocean Biodiversity: What did we Learn?—*O.A. Bergstad with Ó. Ásthórsson, I. Byrkjedal, A.V. Gebruk, J.A. Perez, U. Piatkowski, I.G. Priede, R. S. Santos, M. Vecchione, P. Lorance*
- C2 MAR-ECO North Atlantic Mid-Ocean Biodiversity: What did we Share?—*A. Aspen with G. Langhelle, S. Sælensminde, M. Steffensen, J. Høyer, E. Bartle, Anette Petersen, N. King*
- C3 MAR-ECO Surveying the patterns of life in the understudied depths of the South Atlantic: continuing the legacy of the MAR-ECO project (CoML) into the southern mid-Atlantic ridge—*J.A.A. Perez, with E. Alves, A. Barreto, A. Lima, A.V. Gebruk, S. Kobylansky, V. Alder, J. Augustin, M.R. Clark, P.M. Maciel, D.O. Pires, R.S. Santos, B. v. Zyl, O.A. Bergstad*
- C4 CMarZ DNA Barcoding of Marine Zooplankton—*Ann Bucklin with Blanco-Bercial, L., R. Machida, B.D. Ortman, R.M. Jennings, and L.M. Nigro*
- C5 CMarZ Images from the Census of Marine Zooplankton—*N. J. Copley with R.R. Hopcroft, C. Clarke-Hopcroft, L.P. Madin, and K. Joyce*
- C6 CMarZ Zooplankton species discovery in a biodiversity hotspot: marginal seas of Southeast Asia—*S.S. Nishida with Ohtsuka, J. Nishikawa, et al.*
- C7 CMarZ Sampling the deep sea: zooplankton and fish of the North Atlantic—*P. H. Wiebe with S. Schnack-Schiel, T.T. Sutton, L.P. Madin, M.V. Angel, F. Pagés, R.R. Hopcroft, D. Lindsay, others*
- C8 ICoMM An Extensive Lipid Structure and Mass Spectrometry Database to Recognize Marine Microorganisms—*H.A. Boumann with M.T.J. van der Meer, P.R. Neal, W. Pool, S. Schouten and J.W. de Leeuw*
- C9 ICoMM Global Patterns of Marine Microbial Communities—*Jed A. Fuhrman*

- C10 ICoMM The International Census of Marine Microbes (ICoMM)—*Mitchell L. Sogin with Jan W. de Leeuw, Linda A. Amaral-Zettler*
- D1 TOPP Tagging of Pacific Predators: Understanding Apex Marine Predator Movements in a Dynamic Ocean—*Barbara A. Block with Dan Costa, Ian Jonsen, Arliss Winship, Sal Jorgensen, Steve Bograd, Scott Shaffer, Elliot Hazen, Greg Breed, Autumn-Lynn Harrison, Randy Kochevar, Heidi Dewar, James Ganong, Alan Switenbank, Mike Castleton and Bruce Mate*
- D2 CReefs Autonomous Reef Monitoring Structures (ARMS): From Science to Outreach—A Universal Method to Collect Knowledge of the Unknown—*Rusty Brainard with Nancy Knowlton, Julian Caley, Megan Moews, Molly Timmers, Laetitia Plaisance, Amanda Toperoff*
- D3 CReefs The Diversity of Coral Reefs: Molecular Tools Help Us Understand What Exists and What We Could be Losing—*Nancy Knowlton with Julian Caley, Rusty Brainard, Laetitia Plaisance, Ryuji Machida, Megan Moews*
- D4 CReefs Diversity! Census of Coral Reef Ecosystems Scientists Discover New Species and Fascinating Diversity!—*Nancy Knowlton with Julian Caley, Rusty Brainard, Megan Moews, Laetitia Plaisance, Amanda Toperoff*
- D5 G. Barrier Reef Great Barrier Reef Seabed Biodiversity—*C.R. Pitcher with Browne, M., Venables W., Ellis N., Doherty P.J., Hooper J.N.A., Gribble N.*
- D6 GoMA A Comparison of Regional Marine Biodiversity Studies and Their Application to Ecosystem-Based Management—*Sara L. Ellis with Lewis S. Incze, Peter Lawton, Brian R. MacKenzie, C. Roland Pitcher, Thomas C. Shirley, Henn Ojaveer, John W. Tunnell, and Margit Eero*
- D7 GoMA Size-Scale Strategies for Understanding Biodiversity in the Gulf of Maine Area—*Lewis S. Incze with Peter Lawton, Sara L. Ellis, Peter J. Auster, Anna Metaxas, Ellen Kenchington, Paul V.R. Snelgrove, Nicholas H. Wolff, Stephen J. Smith, Michelle E. Greenlaw*
- D8 GoMA Biodiversity Knowledge and its Application in the Gulf of Maine Area, Northwest Atlantic Shelf—*Peter Lawton with Lewis S. Incze, Sara L. Ellis, Catherine L. Johnson, Noreen E. Kelly, Scott D. Kraus, Peter F. Larsen, William K.W. Li, Jeffrey Runge, Michael E. Sieracki, R. Kent Smedbol, Lou Van Guelpen, Gerhard W. Pohle, Nicholas H. Wolff, Michelle E. Greenlaw, Chelsie A. Archibald, and Ashley E. Holmes*

- D9 **GoMx** Comprehensive Regional Assessment of Known Biodiversity in a Large Marine Ecosystem: The Gulf of Mexico Effort—*John W. Tunnell, Jr. and Fabio Moretzsohn with Darryl L. Felder, and David K. Camp*
- D1 **ICoMM** Measuring Alpha Diversity Across Microbial Ocean Realms—*David Mark Welch with Susan Huse and Linda Amaral-Zettler on behalf of the ICoMM Alpha Diversity Working Group*
- F1 **CAML** Census of Antarctic Marine Life (CAML)—*Victoria Wadley with Michael Stoddart*
- F2 **ArcOD** Arctic Ocean Diversity (ArcOD): The strategy—*B.A. Bluhm with Clarke, C., Gebruk, A.V., Gradinger, R., Hopcroft, R.R., Huettmann, F., Kosobokova, K.N., Mecklenburg, C., Raskoff, K., Sirenko, B.I., Smirnov, I.*
- F3 **ArcOD** Arctic Ocean Diversity (ArcOD) Synthesis: How many species are there?—*Rolf Gradinger with Bluhm, B.A., Gebruk, A.V., Hopcroft, R.R., Huettmann, F., Kosobokova, K.N., Kovacs, K., Lovejoy, C., Mecklenburg, K., Mincks Hardy, S.L., Piepenburg, D., Poulin, M., Sirenko, B.I., Weslawski, J.M.*
- F4 **ArcOD** Arctic Ocean Diversity: Exploration in the field—*R.R. Hopcroft with Bluhm, B.A., Gebruk, A.V., Gradinger, R., Iken, K., Kosobokova, K.N., Weslawski, J.M., Sirenko, B.I., and IPY collaborators*
- F5 **NaGISA** Global-scale biodiversity patterns in nearshore ecosystems—*Katrin Iken with Brenda Konar, Juan Jose Cruz, Lisandro Benedetti-Cecchi, Gerhard Pohle, Patricia Miloslavich, Ann Knowlton, Edward Kimani, Yoshihisa Shirayama*
- F6 **NaGISA** Exploring the nearshore: educating the next generation—*Ann Knowlton with Katrin Iken, Brenda Konar, Juan Jose Cruz, Lisandro Benedetti-Cecchi, Gerhard Pohle, Patricia Miloslavich, Edward Kimani, Yoshihisa Shirayama*
- F7 **POST** Acoustic tracking of marine animals in the Northeast Pacific—*Jonathan Thar*
- F8 **POST** Migratory behavior and habitat use of North American green sturgeon—*Steve Lindley with Dan Erickson and Mary Moser*
- F9 **Australia** A Hierarchical Framework for Classifying Seabed Biodiversity with Application to Planning and Managing Australia's Marine Biological Resources—*Peter R. Last with Vincent D. Lyne, Alan Williams, Campbell R. Davies, Alan J. Butler, Gordon K. Yearsley, Daniel C. Gledhill*
- F10 **Australia** New Australian Sharks and Rays—*William White*

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- F11 **Australia** Biodiversity in Western Australia's Deep Sea—*Allen Williams*
- F12 **Australia** Seamount Ecosystems Conserved in the Huon Commonwealth Marine Reserve, Australia—*Allen Williams*
- F13 **Canada** Towards a pan-Arctic inventory of the species diversity of the macro- and megabenthic fauna of the Arctic shelf seas—*P. Archambault with Piepenburg, D., Ambrose, W. G., Blanchard, A., Bluhm, B. A., Carroll, M. L. Conlan, K. E., Cusson, M., Feder, H. M., Grebmeier, J. M., Jewett, S. C., Lévesque, M., Petryashev, V. V., Sejr, M. K., Sirenko, B. I., Włodarska-Kowalczyk, M.*
- F14 **Canada** Mobilizing Marine Biodiversity Research: The Canadian Healthy Oceans Network—*Paul V.R. Snelgrove with Archambault, P., Juniper, S. K., Lawton, P., Metaxas, A., McKindsey, C., Pepin, P., and Tunnicliffe, V.*
- F15 **EuroCoML** Invasive Alien Species in European Marine Ecosystems—*Anastasija Zaiko with Sergej Olenin*
- F16 **EuroCoML** Biodiversity of the European Seas—*Bhavani E. Narayanaswamy with Henn Ojaveer, Marta Coll, Roberto Danovaro*
- F17 **Caribbean** Marine biodiversity in the Caribbean: increasing awareness through the Census of Marine Life program—*Patricia Miloslavich with Juan Manuel Diaz, Eduardo Klein, Juan José Alvarado, Cristina Diaz, Judith Gobin, Elva Escobar-Briones, Juan José Cruz, Ernesto Weil, Jorge Cortés, Ana Carolina Bastidas, Ross Robertson, Fernando Zapata, Alberto Martín, Julio Castillo, Aniуска Kazandjian, Manuel Ortiz*
- F18 **Indian Ocean** Benthic bacterial diversity: iron ore dominated mangroves versus ilmenite-rich beach sediment—*Christabelle E.G. Fernandes with Sheryl O. Fernandes, P.A. Loka Bharathi*
- F19 **Indian Ocean** Present Status of DNA Barcoding of Marine Species from India—*K.X. Francis with R. Giridhar, K.V. Jayachandran, Vijayalakshmi R. Nair, C.T. Achuthankutty, Shanta Nair*
- F20 **Indian Ocean** Benthic Biodiversity of the Indian Ocean—*B. Ingole with Sautya S., Sivadas S., Singh R., Gophane, A., Gaude G., Mukherjee I., and Sahoo G.*
- F21 **Japan** Japan: a Marine Biodiversity Hotspot!—*Katsunori Fujikura with Dhugal John Lindsay, Hiroshi Kitazato, Shuhei Nishida, Yoshihisa Shirayama*

- F22 **Korea** Marine Biodiversity of Korea—*Youn-Ho Lee with Sejin Pae, Sung Kim, Sung-Dae Kim, Soo-Young Park, Jong-Kyu Park, Ho-Young Soh, Sung-Min Boo, Kang-Hyun Lee*
- F23 **South Africa** Marine biodiversity in South Africa: evaluation of current states of knowledge—*C.L. Griffiths with T.B. Robinson, L. Lange, A. Mead*
- F24 **United States** Attaining Operational Marine Biodiversity Observations—*Linda Amaral Zettler with Gustav Paulay, J. Emmett Duffy, Reg Beach, Michael Feldman*
- F25 **United States** An Overview of Marine Biodiversity in United States Waters—*Daphne Fautin with Melissa Brodeur, Michael Feldman, Andy Rosenberg, Wes Tunnell*

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- F27 **EOL** CoML and the Encyclopedia of Life: Integrating marine biodiversity information online—*J. Hammock with Schultz, K., Parr, C.*
- F28 **Niceville HS** Synergistic Involvement of High School Students in Graduate Level Research Opportunities: A Foundation for Unprecedented Success in Achieving NaGISA's Goals—*Stephanie Y. Hsiang with Kyle S. Saleeby*
- F29 **WoRMS** The World Register of Marine Species, the first online inventory of all marine species—*Ward Appeltans with Decock, Wim; Vanhoorne, Bart; Hernandez, Francisco; Bouchet, Philippe; Boxshall, Geoff; Fauchald, Kristian; Gordon, Dennis; Hoeksema, Bert; Poore, Gary; van Soest, Rob; Stöhr, Sabine; Walter, Chad; Costello, Mark J.*



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