Marine Imaging Workshop

7-10 April 2014
National Oceanography Centre
Southampton, UK

Program

April 7, 2014

18.00-20.00   Icebreaker at Pitcher and Piano, Ocean Village

April 8, 2014

08.00   Registration
08.30   Welcome and Introductions
09.00   Keynote Speaker - *Hanu Singh*

Session 1 – Image Acquisition
Chairs: Maggie Tran, Rafael Garcia

10.00   *Dhugal Lindsay* – Multicamera, multiformat video for multiple uses: insights from the PICASSO project

10.20   *Adrian Glover* – The Adventures of REX: the micro-ROV for Education and eXploration

10.40   Coffee break

11.00   *Stephanie Sharuga* – Evaluation of AUV and ROV imagery for investigation of deep-sea benthic megafauna in reduced-visibility, soft-sediment environments

11.20   *Inge van den Beld* - Comparing a towed camera system and a ROV: the possibilities and limitations

11.40   Tours of NOCS: MARS Hangar and ARENA

12.20   Lunch

Session 2 – Image Processing
Chairs: Claudia Alt, Hanu Singh

13.40   *Aurelien Arnaubec* - Model based illumination correction for underwater imaging

14.00   *Jonas Osterloff* - An overview and rating of benthic image pre-processings for color constancy

14.20   *Brian Bett* - Autonomous Ecological Surveying of the Abyss
14.40   Session 2 Q&A

15.00   Coffee break

Discussion Session – Acquiring Useful Images
Chairs: Maggie Tran, Claudia Alt, Hanu Singh, Rafael Garcia

15.20   Break out discussion

Poster Sessions

16.30   Poster sessions
18.00   End of sessions

April 9, 2014

09.00   *Keynote Speaker – Rafael Garcia*

Session 3 – Data Management and Annotation Software
Chairs: Timm Schoening, Helen Snaith

10.00   *Stephanie Sharuga* - A database approach for managing and evaluating deep-sea benthic megafaunal environmental monitoring data extracted from marine imagery

10.20   *Ariell Friedman* - Autonomous benthic monitoring - the Australian experience so far

10.40   Coffee break

11.00   *Maggie Tran* - A review of scoring methods for underwater video and still images

11.20   *Nancy Jacobsen Stout* - One frame at a time: a history of video analysis at MBARI and observations on creating useful annotation records

11.40   *Jose Nuno Gomes-Pereira* - Human-mediated video annotation software for underwater surveys

12.00   Tours of NOCS: MARS Hangar and ARENA

12.40   Lunch

Session 4 – Image Annotation
Chairs: Kathryn Smith, Nancy Jacobsen Stout

13.40   *Marjolaine Matabos* - Behavioural study of two crustacean decapods (Mirocaris fortunata and Segonzacia mesatlantica) from the Lucky Strike hydrothermal vent field using video imagery

14.00   *Ines Tojeira* - Identifying deep-sea habitats in the Northeast Atlantic: Josephine Seamount case study

14.20   *Jennifer Durden* - A comparison of expert image annotation for benthic ecology

15.00   Coffee break

15.20   *Melanie Bergmann* - Use of BIIGLE and iSIS to analyse time-series image data from the HAUSGARTEN observatory

15.40   Session 4 Q&A

Discussion Session – Challenges in Gaining and Managing Data from Images
Chairs: Timm Schoening, Helen Snaith, Kathryn Smith, Nancy Jacobsen Stout

16.00   Break out discussion

17.30   End of Session

19.30   Workshop Dinner at the Grand Cafe

April 10, 2014

09.00	*Keynote Speaker – Martin Dorhn*

Session 5 – Annotation for Biological Data
Chairs: Leigh Marsh, Marjolaine Matabos

10.00	*Amy Scott-Murray* - Interactive 3D - improving reference materials for working with images
10.20	*Franziska Althaus* - The CATAMI Classification scheme for biota and physical features in underwater imagery provides a national standard for Australia
10.40	Coffee break
11.00	*Kolja Beisiegel* - Underwater Imaging as a tool for marine nature conservation in German offshore waters
11.20	*Diva Amon* - The evaluation of megafaunal biodiversity in the Clarion-Clipperton Fracture Zone using Remotely-Operated-Vehicle (ROV) imagery
11.40	Session 6 discussion
12.00	Lunch
12.30	Tours of NOCS: MARS Hangar and ARENA

Session 6 – Automated Image Annotation
Chairs: Jennifer Durden, Diva Amon

13.00	*Timm Schoening* - Automating megafauna detection in the Porcupine Abyssal Plain
13.20	*Ariell Friedman* - Automated estimation of benthic coverage - a superpixel-based approach
13.40	*Torben Möller* - Introduction of image-based water transparency descriptors to quantify marine snow and turbidity features - a study with data from a stationary observatory
14.00	*Matthew Pugh* - Automatic Classification of Seabed Substrates in Underwater Video
14.20	Session 7 discussion
14.40	Coffee break

Discussion Session – The Future of Marine Visual Imaging
Chairs: Leigh Marsh, Marjolaine Matabos, Jennifer Durden, Diva Amon

15.20	Break out discussion
16.30	Closing remarks

Poster Presentations and Demonstrations

Session A - Image Processing and Demonstrations
A1) *Kirsty Morris* – Autonomous Ecological Surveying of the Abyssal deep-sea using photography
A2) *Jens Greinert* – The underwater navigation and annotation software OFOP
A3) *Helen* Snaith - BODC: Servicing Imagery in Support of UK Marine Science
A4) *Hideaki Saito* – Activity of Web-based publication of deep-sea video-photo in JAMSTEC
A5) Adrian Glover – Deep Sea ID: a field guide to the marine life of the deep sea
A6) *Yann Marcon* – LAPM: a new tool for Large-Area Photo-Mosaicking
A7) *Ines Tojeira* – Estimation of seabed surface areas from deep sea oblique still images
A8) *Henk-Jan Hoving* – A towed optical survey platform to investigate pelagic macrofaunal ocean communities
A9) *Ariell Friedmann* - Squidle: a new centralised web-based framework for management, exporation and annotation of marine imagery
A10) *Ingrid Kjerstad* – The effect of inherent optical properties of seawater on image quality

Session B - Biological Data from Imaging
B12) *Laurence De Clippele* – Integrated ecological and geophysical mapping of cold-water coral habitats: a comparative analysis of the effect of cold-water coral habitat on megafaunal species distribution in the North Atlantic
B13) *Julia Calderwood* – Assessing the effectiveness of starfish removal techniques in benthic mussel (*Mytilus edulis*) cultivation by deploying GoPro cameras from commercial fishing boats
B14) *Sophie Elliott* – Identifying gadoid nursery areas using stereophotogrammetric techniques
B15) *Jack O'Carroll* – Effect of a marine current turbine on the epifaunal communities of tide swept boulders
B16) *Yessica Griffiths* – Underwater photography as a tool for deep sea habitat assessment
B17) *Joana Xavier* – Sponge assemblages of the Condor Seamount (Azores) characterize from underwater imagery
B18) *James Taylor* – Study and Comparison of Species Composition and the Influencing Abiotic Factors of the Benthic Ecosystems at HAUSGARTEN IV, N3 & S3 in 2004 & 2007
B19) *Michela Angiolillo* - Underwater video imaging to characterize Mediterranean rocky benthic habitats
B20) *Rui Pedro Vieira* - Hidden but not enough – AUV survey reveals marine litter in a newly discovered mud volcano from the Horseshoe Valley (NE Atlantic)
B21) *Manuel Gonzalez-Rivero* - Integrating novel approaches to gain knowledge on coral reef seascape ecology using underwater imagery
B22) *Fanny Girard* - Assessing the impact of the Deepwater Horizon oil spill on deep Gulf of Mexico coral communities

B23) *Davide Moccia* - Preliminary ROV surveys data on deep-coral assemblages from South-East Sardinian Sea (central western Mediterranean)
B24) *Kathy Dunlop* - Stereo cameras at Station M; Understanding the carbon utilization of epibenthic megafaunal communities
B25) *Gordon Paterson* – Atlas of Abyssal Megafaunal Morphotypes of the CCFZ

International Scientific Committee
Jennifer Durden (Chair; National Oceanography Centre, Southampton)
Timm Schoening (Bielefeld University)
Linda Kuhnz (Monterey Bay Aquarium Institute)
Maggie Tran (Geoscience Australia)
Rachel Przeslawski (Geoscience Australia)
Lenaick Menot (IFREMER)

Local Organising Committee
Jennifer Durden (Chair)
Claudia Alt
Daniel Jones
Kirsty Morris
Leigh Marsh
Henry Ruhl
Rui Vieira
Deborah Yarrow