

Duane Edgington

Curriculum Vitae

Monterey Bay Aquarium Research Institute
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Moss Landing, CA 95039
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Professional Experience

Monterey Bay Aquarium Research Institute (MBARI), Moss Landing, CA. 1999 - present
Software and Data Systems Engineering. Engineering and Management responsibility for software research and development, embedded software systems, graphical user interfaces, data system software, instrument software, and control systems for custom electronic systems. Data and instrumentation systems, and robotic vehicles. Principal Investigator (PI): (1) application of machine vision to underwater video analysis, (2) NSF grants on Ocean Observatory Instrument Interface Software.

Sun Microsystems Computer Company (Sun), Palo Alto, CA 1994 - 1997
Manager, Electronic Design Automation (EDA) software and Design for Test (DFT). First line management responsibility for EDA tools used by Desktop Systems engineering groups to develop custom integrated circuits and printed circuit boards. Managed software support and software development engineers. Responsible for computer resources and computer support staff for software engineers and design engineers.

VLSI Technology/Compass Design Automation (VLSI), San Jose, CA. 1983 - 1994
Manager, CAE Software; Principal Software Engineer. Second level and first line management responsibility for software applications. Managed group of software engineers, including project leaders, supervisors and managers. Responsible for department budget, hiring, development roadmap, new product development, internal test, product maintenance, external contracted development, and quality assurance. Principal Software Engineer responsibility for product development and special projects.

Applied Micro Circuits Corp. (AMCC), Cupertino, CA. 1981 - 1983
Engineer, ASIC development, CMOS and Bipolar Design Assurance

Education

Post-doctoral Research Fellow
Department of Neurobiology, Stanford University, Stanford, CA. 1978 - 1981
Muscular Dystrophy Association Fellow. Research on nerve growth and regeneration to muscle.

Ph.D. Medical Sciences - Neurobiology,
Harvard University, Graduate School of Arts and Sciences, Cambridge, MA. 1973 - 1978
Research in electrophysiology of vision, electrical properties of photoreceptive nerve cells and mechanisms of visual information processing.

B.S. (with Honor), Biology
California Institute of Technology (Caltech), Pasadena, CA. 1972 - 1973
Developed instruments for measuring scientific data. Conducted research in neurobiology and genetics of behavior with Prof. Seymour Benzer and colleagues.

B.S. (with Honor), Engineering and Applied Science
California Institute of Technology (Caltech), Pasadena, CA. 1968 - 1972
Electrical Engineering, Computer Science. Developed data analysis and visualization software for High-Energy Physics department.

External Research Funding (Grants)

PI. NSF OCE-0330429 "SENSORS: Ocean Observing System Instrument Network Infrastructure" \$745,447 9/1/03-8/31/09

Co-PI. (Subaward) UCSC - NOAA NA16OC2936 "Mooring Technology Efforts in support of the Center for Integrated Marine Technologies" \$1,701,946 08/01/02 – 07/31/07

PI. (Subaward) NSF - "SDCI NMI: Observatory Middleware Framework" \$236,539 10/1/07-9/30/10

PI. (Subaward) NSF OCE-0957938 OCE-10056697 "Ocean Observatory Initiative" \$362,960 09/01/07 - 08/31/15

PI. NSF 1148213 Collaborative Research: SI2-SSI: Empowering the Scientific Community with Streaming Data Middleware: Software Integration into Complex Science Environments \$161,585 08/01/12 – 07/31/15

Committees/Panels

Co-chair, Remote Instrumentation Services in Grid Environment research group (RISGE-RG), Open Grid Forum (OGF). 2007 – present. Convene international group of computer scientists and researchers using advanced remote instrumentation (environmental sensor arrays, telescopes, electron microscopes, x-ray beamlines, particle accelerators, etc.). Convene 3 international meetings per year, plus one international workshop (co-located with International Workshop of Distributed Cooperative Laboratories: Instrumenting the Grid (INGRID)). http://www.ogf.org/ogf/group_info/charter.php?review&group=rисge-rg

- 2007: Seattle, Washington, USA. OGF21. October 15-19, 2007.
- 2008: Cambridge, Massachusetts, USA. OGF22. February 25-28, 2008.
- 2008: Lacco Ameno, Ischia, Italy. INGRID2008. April 9-11, 2008.
- 2008: Barcelona, Spain. OGF23. June 2-6, 2008.
- 2008: Singapore, Singapore. OGF24. September 15-19, 2008.
- 2009: Catania, Italy. OGF25. March 2-6, 2009.
- 2009: Alghero, Sardinia, Italy. INGRID2009. April 1-3, 2009.
- 2010: Brussels, Belgium. OGF30. October 2010.

Program committee member, INGRID 2009, 2010. Review and judge technical contributions for publication and presentation.

Program committee member, ICPR 2014, 2016, 2018. Workshop Computer Vision for Analysis of Underwater Imagery. Review and judge technical contributions for publication and presentation.

Program committee member, ICMR 2015, program committee of International Workshop on Environmental Multimedia Retrieval. Review and judge technical contributions for publication and presentation.

Expert Panel Member, NOAA Fisheries Automated Image Analysis Strategic Initiative. Advise NOAA on Computer Vision technology and methods for fisheries image automated analysis. http://marineresearchpartners.com/nmfs_aiasi/Home.html

Patents

Puck interface adapter including drivers for interfacing serial device to host wherein puck implements command mode and pass through mode. United States Patent 6901464. Awarded May 31, 2005.

Abstract: The invention provides a plug-and-work sensor interface device named "puck" for fast and easy deployment of various types of serial devices, which include commercial off-the-shelf and custom-made sensors and instruments, in a distributed, dynamic oceanic observing network. In an embodiment, each puck is removably attached and electrically coupled to a specific sensor to be deployed. The puck comprises a non-volatile memory for associating and storing arbitrary binary information about the sensor and a microprocessor for controlling how the information is read from and written into the non-volatile memory. The sensor information may include unique sensor identifier, sensor metadata, sensor device driver, etc. The puck itself does not execute any of the device code; rather, a host retrieves the sensor information from the puck when the puck is plugged in. The retrieval can be done automatically or semi-automatically with user interaction. After introducing the sensor to the host, the puck retires into a pass mode, allowing the host to communicate directly with the sensor. According to an aspect of the invention, the deployment of any serial device essentially consists of the steps of removably attaching a puck to the serial device and plugging the puck into a host.

<http://www.google.com/patents?id=BQAWAAAEBAJ&pg=PA1&lpg=PA1&dq=United+States+Patent+6901464>

Selected Publications

Cline, D.E., Edgington, D.R., Ruhl, H., Durden, J.M., Hosking, W.B. (2018) Analysis of convolution detection architectures for deep-water benthic imagery. Ocean Sciences Meeting, 11-16 February 2018. Portland, Oregon, USA.

- Shafit, F., Harvey, E.S., Shortis, M.R., Mian, A., Ravanbakhsh, M., Seager, J.W., Culverhouse, P.F., Cline, D.E., **Edgington, D.R.** (2017). Towards automating underwater measurement of fish length: a comparison of semi-automatic and manual stereo-video measurements. *ICES Journal of Marine Science*, Vol. 74, issue 6, pg. 1690-1701. <https://doi.org/10.1093/icesjms/fsx007>
- Ruhl, H.A., Morris, K.J., Durden, J.M., Bett, B.J., Benoist, N.M.A., Bailey, D.M., Milligan, R.J., Schoening, T., Nattkemper, T.W., Cline, D., **Edgington, D.R.** (2017) Autonomous Ecological Surveying of the Abyss at the Porcupine Abyssal Plain. *Marine Imaging Workshop*, Kiel, Germany, Feb 20-24, 2017. <http://marine-imaging-workshop.com/>
- Ruhl, H.A., Durden, J.M., Jones, D.O.B., Bett, Schoening, T., Nattkemper, T.W., Cline, D., **Edgington, D.R.** (2016) Computer vision and machine learning needs for research in biological oceanography. *Workshop on Computer Vision for Analysis of Underwater Imagery*, Cancun Mexico, 4 December 2016. <http://cvau2016.oceannetworks.ca/keynote-speakers>
- Shafit, F., Mian, A., Shortis, M., Ghanem, B., Culverhouse, P.F., Edgington, D.R., Cline, D., Ravanbakhsh, M., Seager, J., Harvey, E.S. (2016). Fish identification from videos captured in uncontrolled underwater environments. *ICES Journal of Marine Science*. Vol 73, issue 10, pg 2737-2746. <https://doi.org/10.1093/icesjms/fsw106>
- Del Rio, J., Toma, D., O'Reilly, T.C., Bröring, A., Dana, D.D., Bache, F., Headley, K.L., Lázaro, A.M., and **Edgington, D.R.** (2013) Standards-based Plug & Work for Instruments in Ocean Observing Systems. *IEEE Journal of Oceanic Engineering*. Vol 39, issue 3, pg. 430-443. Doi: <http://dx.doi.org/10.1109/JOE.2013.2273277>
- Shortis, M.R., Ravanbakhsh, M., Shaifat, F., Harvey, E.S., Mian, A., Seager, J.W., Culverhouse, P.F., Cline, D.E., **Edgington, D.R.** (2013) A Review of Techniques for the Identification and Measurement of Fish in Underwater Stereo-Video Image Sequences. *Proc. SPIE 8791, Videometrics, Range Imaging, and Applications XII; and Automated Visual Inspection, 87910G* (May 23, 2013); doi:10.1117/12.2020941
- Gomes, K., Cline, D.E., **Edgington, D.R.**, Godin, M., Maughan, T., McCann, M., O'Reilly, T., Bahr, F., Chavez, F., Messie, M., Das, J., Rajan, K. (2013). ODSS: A Decision Support System for Ocean Exploration. *Proceedings, Data Engineering Workshops (ICDEW), 2013 IEEE 29th International Conference on*; DOI: 10.1109/ICDEW.2013.6547450
- Fernandez, J.R., Toma, D.M., O'Reilly, T.C., Bröring, A., Lázaro, A.M., Headley, K., **Edgington, D.R.** (2012) Interoperable Data Management and Instrument Control Experiences at OBSEA. *Proceedings, OCEANS '11 IEEE Santander Spain June 6-9, 2011*.
- Toma, D.M., O'Reilly, T.C., Del Rio, J., Headley, K., Manuel, M., **Edgington, D.R.** (2011) Smart Sensors for Interoperable Smart Ocean Environment. *Proceedings, OCEANS '11 IEEE Santander Spain June 6-9, 2011*.
- Headley, K. L.; Bröring, A.; O'Reilly, T. C.; Toma, D.; Del Rio, J.; Bermudez, L. E.; Zedlitz, J.; Johnson, G.; **Edgington, D.R.** (2010) OGC standards for end-to-end sensor network integration. Abstract IN31B-129 presented at 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 December 2010.
- Herlien, R., O'Reilly, T., Headley, K., **Edgington, D.R.**, Tilak, S., Fountain, T., Shin, P. (2010) Ocean Observatory Sensor Network Middleware Application. *Proceedings, IEEE Sensors 2010 Conference*, November 1-4, 2010, Waikoloa, HI USA
- Cline, D.E., **Edgington, D.R.** A Detection, Tracking, and Classification System for Underwater Images. *Visual observation and analysis of animal and insect behavior (VAIB), 20th International Conference on Pattern Recognition (ICPR 2010)*, Istanbul, Turkey, August 22, 2010.
- O'Reilly, T.C., Headley, K.L., Herlien, R.A., Salamy, K.A., Tilak, S.S., **Edgington, D.R.**, Fountain, T.R., Brewer, P., Kirkwood, W. A sensor network platform to study impact of ocean acidification in deep water environments. *International Conference on Distributed Computing in Sensor Systems (DCOSS '10)*, June 21-31, 2010, Santa Barbara, CA USA. (poster and demonstration)
- Waldmann, C., Lázaro, A.M., Delory, E., Tilak, S., Philips, R., Davis, E., Johnson, G., Johnson, F., Zedlitz, J., Bghiel, I., Fernandez, J.R., O'Reilly, T.C., Headley, K., Toma, D.M., Cater, N., Rueda, C., **Edgington, D.R.**, Ng, C. (2009) Evaluation of MBARI PUCK Protocol for Interoperable Ocean Observatories. *International Workshop on Marine Technology. "Third international congress on marine technology"*. Vilanova i la Geltrú: 2009.
- Cline, D.E., **Edgington, D.R.**, Smith, K.L., Vardaro, M.F., Kuhn, L. An Automated Event Detection and Classification System for Abyssal Time-Series Images of Station M, NE Pacific. *MTS/IEEE Oceans 2009 Conference Proceedings*, October, 2009. Biloxi, Mississippi USA.
- Schlining, B., Raymond, E., Cline, D., **Edgington, D.** (2009) Drinking From a Firehouse: Managing Video From Ocean

- Edgington, D.R.**, Randal Butler, Terry Fleury, Kevin Gomes, John Graybeal, Robert Herlien, Von Welch. 2009. Observatory Middleware Framework (OMF). 4th International Workshop on Distributed Cooperative Laboratories: Instrumenting the Grid (INGRID 2009). April 1-3, 2009. Alghero, Sardinia, Italy. Published in: Remote Instrumentation Services on the e-Infrastructure. Davoli, Meyer, Pugliese, Zappatore (eds). Springer, 2011. ISBN: 978-1-4419-5573-9.
- O'Reilly, T. C., K. Headley, **D. R. Edgington**, C. Rueda, K., Lee, E. Song, C. Albrechts, J. del Rio, D. Toma, A. Manuel, E. Delory, C. Waldmann, S. Fairgrieve, Bermudez, L. E., E. Bridger, P. Bogden and A. Amirault (2009). Instrument Interface Standards for Interoperable Ocean Sensor Networks. Oceans'09 IEEE, Bremen, Germany, 11–14 May 2009.
- Edgington, D.R.**, Cline, D.E., Schlining, B., Raymond, E. (2008). Automated visual event detection, tracking, and data management system for cabled-observatory video. *Eos Trans AGU*, 89(53), Fall Meet. Suppl, Abstract IN23B-1080 (Poster)
- Butler, R., Fleury, T., Welch, V., **Edgington, D.R.**, Gomes, K., Graybeal, J., Herlien, B. Observatory Middleware Framework (OMF). *IEEE International Conference on e-Science*, December 8-12, 2008, Indianapolis, IN, USA (Poster)
- Cline, D.E., **Edgington, D.R.**, Schlining, B., Raymond, E. Demonstration of an automated visual event detection, tracking, and data management system for cabled-observatory video. *ICDSC ACM/IEEE International Conference on Distributed Smart Cameras*, September 7-11, 2008, Stanford University, California, USA. (Demonstration)
- Cline, D.E., **Edgington, D.R.**, Schlining, B., Raymond, E. Demonstration of an automated visual event detection, tracking, and data management system for cabled-observatory video. *CENIC Corporation for Education Network Initiatives in California CalREN-XD/HPR Workshop 2008*, September 15-15, 2008, Calit2, University of California, San Diego, CA. (Demonstration)
- Edgington, D R**; Cline, D E; Mariette, J; An Automated Visual Event Detection System for Observatory Video. *Ocean Sciences Meeting*, March 2-7, 2008, Orlando, Florida. (Poster)
- Gomes, K J; **Edgington, D**; Herlien, R; O'Reilly, T C; Liu, Y; Butler, R; Freemon, M; Welch, V; Arrott, M; Howe, B; Cyberinfrastructure and Middleware Applied to Ocean Observing Systems. *Ocean Sciences Meeting*, March 2-7, 2008, Orlando, Florida. (Poster)
- Graybeal, J; Headley, K; O'Reilly, T C; Arrott, M; Krueger, I H; **Edgington, D R**; Gomes, K J; Sensors for Ocean Observatories: the Missing Link(s) *Ocean Sciences Meeting*, March 2-7, 2008, Orlando, Florida. (Poster)
- Cline, D.E., **Edgington, D.R.**, Mariette, J. An Automated Visual Event Detection System for Cabled Observatory Video. *3rd International Conference on Computer Vision Theory and Applications*, 22-25 January, 2008. Funchal, Madeira Portugal.
- Gomes, K., M. Arrott, R. Butler, **D. Edgington**, M. Freemon, R. Herlien, B. Howe, Y. Liu, T. O'Reilly, V. Welch, F. Vernon, K. Salmay (2007). Cyberinfrastructure and Software Middleware Efforts Applied to Ocean Observing Systems. *Eos Trans. AGU*, 88(52), Fall Meet. Suppl., Abstract IN13B-1221 (Poster)
- Edgington, D.R.**, D.E. Cline, J. Mariette (2007). An Automated Visual Event Detection System for Cabled Observatory Video. *Eos Trans. AGU*, 88(52), Fall Meet. Suppl., Abstract IN13B-1216 (Poster)
- Edgington, D.** Ocean Observing System Instrument Network Infrastructure, Observatory Middleware Framework (OMF), and Ocean Observing Initiative Network for Ocean Research, Interaction and Application (NORIA) project. *21st Open Grid Forum*, October 15-19, 2007, Seattle, Washington.
- Barde, J., **Edgington, D.**, and Desconnets, J.-C. A Generic Approach to Manage Metadata Standards. *Free and Open Source Software for Geospatial 2007 (FOSS4G2007) Conference Proceedings*, Victoria, Canada. OSGeo Journal. **3**, 24 - 30, 2007.
- Cline, D.E., **Edgington, D.R.**, Mariette, J., An Automated Visual Event Detection System for Cabled Observatory Video. *MTS/IEEE Oceans 2007 Conference Proceedings*, Vancouver, Canada September 2007. IEEE Press.
- Edgington, D.R.**, Cline, D.E., Kerkez, I., Mariette, J., Detecting, Tracking and Classifying Animals in Underwater Video. *International workshop on Video Processing and Recognition (VideoRec '07)*, Montréal, Canada, May 2007.
- Edgington, D.R.**, Cline, D.E., Kerkez, I., Mariette, J., Detecting, Tracking and Classifying Animals in Underwater Observatory Video. *Underwater Technology Symposium (UT07)/ Workshop on Scientific Use of Submarine Cables & Related Technologies (SSC07)*, Tokyo, Japan, April 2007.

- Edgington, D.R.**, Cline, D.E., Mariette, J., Kerkez, I. Detecting and Tracking Events Automatically in Underwater Video. *ASLO Aquatic Sciences Meeting* Santa Fe, NM February 2007.
- Edgington, D.R.**, Davis, D., and O'Reilly, T. Ocean Observatory Instrument Software Infrastructure (060323-09), *MTS/IEEE Oceans 2006 Conference Proceedings*, Boston, MA September 2006. IEEE Press.
- Edgington, D.R.**, Cline, D.E., Davis, D., Kerkez, I., and Mariette, J., Detecting, Tracking and Classifying Animals in Underwater Video (060331-207). *MTS/IEEE Oceans 2006 Conference Proceedings*, Boston, MA September 2006. IEEE Press.
- O'Reilly, T.C., Headley, K, Graybeal, J., Gomes, K.J., **Edgington, D.R.**, Salamy, K.A., Davis, D., and Chase, A. MBARI technology for self-configuring interoperable ocean observatories (060331-236), *MTS/IEEE Oceans 2006 Conference Proceedings*, Boston, MA September 2006. IEEE Press.
- Edgington, D.R.**, I. Kerkez, D.E. Cline, J. Mariette, M. Ranzato, and P. Perona, Detecting, Tracking and Classifying Animals in Underwater Video. *Proceedings IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)*, demonstration, New York, N.Y., 2006.
- Davis, D., **Edgington, D.R.** O'Reilly, T.C. Ocean Observatory Instrument Software Infrastructure. *Eos Trans. AGU*, 86(52), Ocean Sci. Meet. Suppl., Abstract OS45D-29, 2006. Honolulu, HI.
- O'Reilly, T., K. Headley, M. Risi, J. Connor, **D. Edgington**, D. Davis, J. Backes, S. Nylund, W. Strubhar, "Plug-and-work instrument technology for oceanographic observation systems - an update", *AGU*, 86(52), Ocean Sci. Meet. Suppl., Abstract OS45D-31, 2006, Honolulu HI.
- Edgington, D.R.**, I. Kerkez, D. Oliver, D.E. Cline, R. Sherlock, B. Robison, L. Kuhnz, M.'A. Ranzato, and P. Perona, Detecting, Tracking and Classifying Animals in Underwater Video. *Eos Trans. AGU*, 86(52), Ocean Sci. Meet. Suppl., Abstract OS46G-01, 2006. Honolulu, HI.
- Edgington, D.R.**, I. Kerkez, D. Oliver, D.E. Cline, R. Sherlock, B. Robison, L. Kuhnz, M.'A. Ranzato, and P. Perona, Detecting, Tracking and Classifying Animals in Underwater Video. *Eos Trans. AGU*, 87(36), Fall Meet. Suppl., Abstract OS51C-0576, 2005. San Francisco, CA.
- Edgington, D.R.**, I. Kerkez, D.E. Cline, D. Oliver, M. Ranzato, and P. Perona, Detecting and Tracking Animals in Underwater Video. *Proceedings IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)*, demonstration, San Diego. CA, 2005.
- Edgington, D.R.**, Kerkez, I., Oliver, D., Cline, D., Sherlock, R., Robison, B., Kuhnz, L., Walther, D., Ranzato, M., Perona, P. Detection and Classification of Selected Midwater and Benthic Organisms in Underwater Video. in *International Ocean Research Conference Proceedings*. June 2005. Paris, France: UNESCO.
- Edgington, D.R.**, Kerkez, I., Oliver, D., Cline, D., Kuhnz, L., Walther, D., Ranzato, M. Perona, P. Detection and Classification of Rathbunaster Californicus in Underwater Video. in *Eos. Trans. AGU*, 86(18), Jt. Assem. Suppl., Abstract U24A-05, 2005.
- Edgington, D.R.**, Davis, D. Ocean Observing System Instrument Network Infrastructure. *International Ocean Research Conference Proceedings*. June 2005. Paris, France: UNESCO.
- Edgington, D. R.** and Davis, D. Ocean Observing System Instrument Network Infrastructure. Proceedings of the EuroGOOS Brest Conference 2005. Elsevier.
- Edgington, D.R.**, Oliver, D., Cline, D., Sherlock, R., Robison, B., Ranzato, M., Perona, P. Automated Annotation of Midwater Video Transects: Taking a Look at the Distribution of *Poeobius meseres* in Monterey Bay During and After an El Nino. in *ASLO Summer Meeting*. June 2005. Santiago de Compostela, Spain.
- Edgington, D.R.** and Davis, D., eds., 2004, SENSORS: Ocean Observing system Instrument Network Infrastructure, NSF SENSORS Project Workshop Report, MBARI, Moss Landing, CA. http://www.orionprogram.org/PDFs/Sensors_WkshpRpt.pdf
- Edgington, D.R.**, Kerkez, I., Oliver, D., Kuhnz, L., Cline, D., Walther, D., Itti, L. Detecting Benthic Megafauna in Underwater Video, *Eos Trans. AGU*, 85(47), Fall Meet. Suppl., Abstract OS43B-0551, pg. F1086, 2004.

- O'Reilly, T. Headley, K., Herlien, R., Risi, M., Davis, D., **Edgington, D.R.**, Gomes, K., Meese, T., Graybeal, J., Chaffey, M. Software Infrastructure for the MBARI Ocean Observing System. *MTS/IEEE Oceans 2004 Conference Proceedings*, November 2004, Kobe, Japan. IEEE Press.
- McBride, L., Risi, M., Erickson, J., O'Reilly, T., **Edgington, D.R.**, Chaffey, M. Sensor Puck Hardware Implementations for MBARI's Moored Ocean Observatory. *MTS/IEEE Oceans 2004 Conference Proceedings*, November 2004, Kobe, Japan. IEEE Press.
- Walther, D., **D.R. Edgington**, C. Koch, Detection and Tracking of Objects in Underwater Video. *Proceedings IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)*, Oral Session 2B, 1:544-549, Washington, D.C., 2004.
- Edgington, D.R.**, D. Walther, D.E. Cline, R.E. Sherlock, and C. Koch, Detecting and Tracking Animals in Underwater Video. *Proceedings IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)*, demonstration, Washington, D.C., 2004.
- Edgington, D. R.**, D. Walther, D. E. Cline, R. Sherlock, and C. Koch. Detecting and tracking animals in underwater video using a neuromorphic saliency-based attention system. American Society of Limnology and Oceanography (ASLO) Summer Meeting, pg. 20, Savannah, Georgia, USA, June 13-18, 2004.
- Davis, D.L. and **D.R. Edgington**. Getting size scale from a single moving underwater camera. American Society of Limnology and Oceanography (ASLO)/The Oceanography Society (TOS) Ocean Research Conference, pg. 38, Honolulu, Hawaii, USA, February 15-20, 2004
- Duane R. Edgington**, D. Walther, D.E. Cline, R. Sherlock, K.A. Salmay, A. Wilson, and C. Koch. Detecting and tracking animals in underwater video using a neuromorphic saliency-based attention system. American Society of Limnology and Oceanography (ASLO)/The Oceanography Society (TOS) Ocean Research Conference, pg. 44, Honolulu, Hawaii, USA, February 15-20, 2004
- Walther, D., **Edgington, D.** The art of seeing jellies. *The Neuromorphic Engineer* (2004) **1**, 6-6
- Edgington, D. R.**, D. Davis, T.C. O'Reilly, M. Risi, K.L. Headley, L. McBride, J.G. Bellingham. SENSORS: Ocean Observing System Instrument Network Infrastructure. Presented at The Ocean Research Interactive Observatory Network (ORION) workshop, San Juan, Puerto Rico, January 4-8, 2004.
- Edgington, D. R.**, D. Walther, D. E. Cline, R. Sherlock, K. A. Salmay, A. Wilson, and C. Koch, Detection of Visual Events in Underwater Video Using a Neuromorphic Saliency-based Attention System, *Eos Trans. AGU*, 84(46), Fall Meet. Suppl., Abstract H11F-0912, 2003
- Walther, D., **Edgington, D.**, Salmay, K., Risi, M., Sherlock, R.E., Koch, C. (2003). Automated video analysis for Oceanographic Research. IEEE Computer Vision and Pattern Recognition Conference (CVPR) Proceedings, Madison Wisconsin, June 16-22, 2003.
- Edgington, D.**, Walther, D., Salmay, K., Risi, M., Sherlock, R.E., Koch, C. (2003). Automated Event Detection in Underwater Video. *MTS/IEEE Oceans 2003 Conference Proceedings*, San Diego, CA, September 2003. IEEE Press.
- Headley, K., Davis, D., **Edgington, D.**, McBride, L., O'Reilly, T., Risi, M. (2003). Managing Sensor Network Configuration and Metadata in Ocean Observatories Using Instrument Pucks. *Proceedings, the 3rd International workshop on Scientific Use of Submarine Cables and Related Technology (SSC' 03)*, pages 67-70, Tokyo, Japan, June 25-27, 2003.
- Davis, D., T. O'Reilly, **D.R. Edgington**, R. Schramm. (2004). Using XML Technology for Data and System Metadata for the MBARI Ocean Observing System. *Colour of Ocean Data Symposium Proceedings*, pages 135-145, The Palais des Congrès, Brussels, Belgium, November 2002. IOC Workshop Report No. 188.
- Edgington, D. R.** and D. Walther (2002). Detection of visual events in underwater video using a neuromorphic saliency-based attention system. *Report on the 2002 Workshop on Neuromorphic Engineering*, pages 25 – 29, Telluride, CO, July 2002. <http://www.ini.unizh.ch/telluride/previous/report02.pdf>
- T.C. O'Reilly, **D.R. Edgington**, D. Davis, R. Henthorn, M.P. McCann, T. Meese, W. Radochonski, M. Risi, B. Roman, R. Schramm. "Smart Network" Infrastructure for the MBARI Ocean Observing System. *MTS/IEEE Oceans 2001 Conference Proceedings*, pages 1276-1282, Honolulu, HI, USA November 2001. IEEE Press.

- T.C. O'Reilly, **D. Edgington**. Software Infrastructure for the MBARI Ocean Observing System. *International Workshop on Autonomous Measurements of Biogeochemical Parameters in the Ocean*. Honolulu, HI, February, 2001.
<http://www.aist.go.jp/NIRE/oshirase/ocean/workshop.html>
- T. Meese, **D.R. Edgington**, W. Radochonski, K. Headley, S. Jensen. A New Mooring Controller Platform: an evolution of the OASIS Instrument Controller toward a distributed Ocean Observing System. *MTS/IEEE Oceans 2001 Conference Proceedings*, pages 1296-1302, Honolulu, HI, USA November 2001. IEEE Press.
- D.E. Cline, T.C. O'Reilly, T. Meese, B. Roman, **D.R. Edgington**. The Environmental Sample Processor (ESP) Software Design: Software for Detection and Quantification of Microorganisms. *MTS/IEEE Oceans 2001 Conference Proceedings*, pages 287-294, Honolulu, HI, USA November 2001. IEEE Press.
- Shih Chii Liu, Jorg Kramer, **Duane Edgington**, Tobi Delbruck. Making direction selective cells using AER retina and spiking neurons. *Report on the 2001 Workshop on Neuromorphic Engineering*, pages 94 – 96, Telluride, CO, July 2001.
<ftp://ftp.ini.unizh.ch/pub/giacomo/telluride/report01.pdf>
- Tom O'Reilly, **Duane Edgington**. An object-oriented software approach to AUV sensor integration, presented at AUV Sensors Workshop, Miami, FL USA April 4, 2000.
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