

CURRICULUM VITAE

Name: Carolyn A. Larabell, Ph.D.

Position: Professor
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Physical Biosciences Division
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EDUCATION:

1988	Arizona State University	Ph.D.	Zoology/Cell Biology
1989	Stanford University	Postdoc	Neurobiology
1990	University of California, Davis	Postdoc	Biochem/Biophysics

EMPLOYMENT HISTORY:

1990-2000 Staff Scientist, Life Sciences Div., Lawrence Berkeley National Laboratory
1997-2003 Group Leader, Innovative Microscopies, Lawrence Berkeley National Laboratory
2000-2003 Faculty Scientist, Life Sciences Division, Lawrence Berkeley National Laboratory
2000-2004 Associate Professor, Department of Anatomy, University of California, San Francisco
1999-present Advanced Light Source Professor, Lawrence Berkeley National Laboratory
2003-present Faculty Scientist, Physical Biosciences Division, Lawrence Berkeley National Laboratory
2004-present Professor, Department of Anatomy, University of California, San Francisco
2004-present Director, National Center for X-ray Tomography (*NIH-NIGMS Biomedical Technology Research Center*)

HONORS AND AWARDS

1997 Outstanding Performance Award, Lawrence Berkeley National Laboratory
1999-2002 Keith R. Porter Fellowship
2010 Outstanding Lecturer Award, Pacific Northwest National Laboratory
2013 Arizona State University School of Life Sciences Outstanding Alumnus Award

PROFESSIONAL ACTIVITIES:

Memberships

1985-present, American Society for Cell Biology
1998-present, Society for Developmental Biology
1990-present, Microscopy Society of America
2003-present, Biophysical Society
2003-present, International Society of Differentiation
2009-present, American Chemical Society

Professional Service

1999-2002	Advanced Light Source, Lawrence Berkeley National Laboratory Synchrotron Facility	Executive Committee
2002	Gordon Conference, Developmental Physiology	Vice Chair
2002	Society for Developmental Biology, West Coast Regional Meeting	Organizer
2002	International Conference on X-ray Microscopy	Symposium Chair
2003	International Society of Differentiation	Symposium Organizer
2003	California Institute for Quantitative Biomedical Research, Imaging Symposium	Session Chair
2004	NSF Engineering Research Center in UV Science	Scientific Advisory Board
2004	University of Wisconsin, Madison Synchrotron Radiation Center	Dean's Advisory Com.
2004	SPiE, The International Society for Optical Engineering; "Colloidal Quantum Dots for Biomedical Applications"	Program Committee
2004-present	Biophysics Collaborative Access Team at Argonne National Laboratory Synchrotron, a NIH-NCRR Biomedical Technology Research Center	Scientific Advisory Com.
2004	Advanced Light Source (Synchrotron at Lawrence Berkeley National Laboratory) Users Organization	Session Co-Chair
2005	National Academies of Sciences Study on Revealing Chemistry through Advanced Imaging Technologies	
2005	Photonics West Biomedical Optics Society Symposium	Program Committee
2005	International Microscopy Society	Program Committee
2005-08	Advanced Light Source, Lawrence Berkeley National Laboratory Synchrotron Facility	Scientific Advisory Com.
2006	4th International Conference on Electron Tomography	Session Co-Chair
2008	National Academy of Sciences Meeting on Visualizing Chemistry: Advances in Chemical Imaging, X-ray and Electron Imaging' Symposium	Session Organizer
2008	University of Wisconsin, Madison Synchrotron Radiation Center	Dean's Advisory Com.
2009-10	INSTRUCT: Integrated Structural Biology Infrastructure for Europe	Science Advisory Com.
2009	International Congress on Biology and Synchrotron Radiation & Medical Applications of Synchrotron Radiation	Organizing Committee
2009-present	National Center for Microscopy and Imaging Research, a NIH-NCRR Biomedical Technology Research Center	Scientific Advisory Com.
2010	University of Chicago's Argonne National Laboratory Advanced Photon Source	Scientific Advisory Board
2010-present	Stanford Linac Coherent Light Source	Scientific Advisory Com.
2012-present	National Synchrotron Radiation Research Center	Scientific Advisory Com.

Review Panels

1998-2008	National Institutes of Health Special Emphasis Study Sections (SSSU)	Committee Member (1/yr)
2001-2011	Synchrotron Radiation Center, University of Wisconsin, Madison WI	Proposal Reviews (2/yr)
2002-04	National Institutes of Health Study Section [ZRG1 SSSU (10), Imaging Technology Development	Committee Member (3/yr)
2002-present	National Institutes of Health review of NCRR and NIBIB Biomedical Technology Research Centers	Site Visit Committees (12)
2005-07	National Institutes of Health Microscopic Imaging Study Section (MI)	Committee Member (3/yr)
2007	National Institutes of Health Study Section (GCMB)	Committee Member (1)
2007-09	National Synchrotron Light Source	Proposal Reviews
2008-09	National Institutes of Health Microscopic Imaging Study Section (MI)	Chair
2009	National Institutes of Health Challenge Grants	Committee Member (1)
2009	National Institute of Biomedical Imaging and Bioengineering Study Section	Committee Member (1)
2009-10	National Center for Research Resources Technology Development Study Section	Committee Member (1/yr)
2010	Danish Agency for Science, Technology and Innovation	Reviewer
2010-present	NIH College of Reviewers	Member
2010-present	Special Emphasis Studies Sections, NIH	Member
2010	Czech Science Foundation	Reviewer
2011	Swiss National Science Foundation	Reviewer
2012	Medical Research Council, England	Reviewer
2012	NIH-NCRR Biomedical Instrumentation Special Emphasis Panel	Committee Member
2013	NIH-NIGMS Biomedical Instrumentation Special Emphasis Panel	Chair
2013	National Institute of Biomedical Imaging and Bioengineering Study Section	Committee Member (1)
2014	NIH-NIGMS Biomedical Instrumentation Special Emphasis Panel	Committee Member

Editorial Boards

1992 – 2004	Editorial Board, Microscopy Research and Technique
2000 – present	Editorial Board, Differentiation
2008 – present	Editorial Board, Journal of Structural Biology

Ad hoc Reviewer

Biochemistry, Biophysics Journal, Developmental Biology, Developmental Cell, Journal of American Chemical Society, Journal of Microscopy, Nanoletters, Nature, Nature Biotechnology, Nature Materials, Nature Methods, Nature Physics, PNAS, Ultramicroscopy

INVITED PRESENTATIONS (2000-present):

- 2000 Seminar, Physics Institute, University of Göttingen, Göttingen, Germany
- 2000 Speaker, Gordon Conference, Developmental Physiology, New Hampshire
- 2000 Speaker, Microscopy Society of America
- 2000 Speaker, American Society for Cell Biology
- 2000 Speaker, West Coast Developmental Biology Meeting
- 2000 Seminar, Center for Environmental Biology, LBNL
- 2000 Speaker, JASON Summer Study on Biofuture
- 2001 Speaker, Symposium on 'Tracking Proteins,' Osnabruck, Germany
- 2001 Plenary Speaker, XIII International Conference on Vacuum Ultraviolet Radiation in Physics, Trieste, Italy
- 2001 Plenary Speaker, Bay Area Science Infrastructure Consortium – Focus on Bioscience
- 2001 Seminar, University of Colorado Health Sciences Center
- 2001 Scientific Lecture Series, Department of Energy, Washington DC
- 2001 Seminar, Department of Biology, Purdue University
- 2002 Symposium Speaker, VII International Conference on X-ray Microscopy, Grenoble France
- 2002 Symposium Speaker, Microscopy & Microanalysis 2002, Quebec Canada
- 2002 Symposium Speaker, International Society of Differentiation, Lyon France
- 2002 Symposium Speaker, Canadian Light Source Annual Users Meeting, Saskatchewan
- 2002 Symposium Speaker, Stanford Synchrotron Radiation Laboratory Annual Users Meeting
- 2002 Speaker, Gordon Conference, Lasers in Medicine and Biology
- 2002 Speaker, Department of Energy Imaging Workshop, Washington DC
- 2002 Speaker, Mini-symposium, American Society for Cell Biology
- 2002 Symposium Speaker, Coherent Workshop on Imaging Techniques, San Jose
- 2002 Seminar, M.D. Anderson Cancer Center, Houston TX
- 2003 Plenary Lecture, Advanced Light Source Annual Users Meeting, Berkeley California
- 2003 Speaker, Diamond Light Source Workshop on Soft X-ray Microscopy and Imaging, Oxford England
- 2003 Symposium Speaker, X-ray Microscopy Workshop, Synchrotron Soleil, France
- 2003 Symposium Speaker, Quantum Dots in Biology, San Jose CA, SPIE
- 2003 Symposium Speaker, Canadian Society for Chemistry, Ottawa Canada
- 2003 Seminar, Experimental Systems & Scientific Support Group Meeting, ALS, LBNL
- 2003 Speaker, Molecular Foundry Workshop, LBNL
- 2003 Seminar, University of Texas at Austin
- 2003 Seminar, National Synchrotron Light Source, Brookhaven National Laboratory
- 2004 Symposium Speaker, XIV International Conference on VUV Radiation in Physics, Cairns, Australia
- 2004 Symposium Speaker, Third International Electron Tomography Meeting
- 2004 Symposium Speaker, Synchrotron Radiation Center Users Meeting, Madison WI
- 2004 Symposium Speaker, X-ray Microscopy Workshop, Spain Synchrotron, Barcelona Spain
- 2004 Symposium Speaker, National Synchrotron Radiation Laboratory (NSRL), Taiwan
- 2004 Symposium Speaker, Biophysical Society Meeting, Baltimore MD
- 2004 Speaker, DOE Genomes to Life Workshop, Washington DC
- 2004 Symposium Speaker, Keystone Conference
- 2004 Speaker, Gordon Conference, Mechanisms of Toxicity
- 2004 Symposium Speaker, Microscopy and Microanalysis 2004, Savannah Georgia
- 2004 Speaker, NIH-DOE Imaging Workshop, Bethesda MD
- 2004 Seminar, Physical Biosciences Division Seminar Series, LBNL
- 2004 Speaker, Annual NIH/NCRR Principal Investigators Meeting

2004 Summer Lecture Series, Lawrence Berkeley National Laboratory
 2004 Speaker, Bio-X Seminar Series, Stanford University
 2005 Seminar, Max Planck Institute, Stuttgart Germany
 2005 Symposium Speaker, Spain Synchrotron Users Association Meeting, Madrid Spain
 2005 Symposium Speaker, 8th International Conference on X-ray Microscopy, Himeji Japan
 2005 Symposium Speaker, Synchrotron Soleil, Paris France
 2005 Symposium Speaker, American Chemical Society Meeting
 2005 Symposium Speaker, American Physical Society Meeting
 2005 Plenary Lecture, National Nanotechnology Initiative Workshop, DOE, Washington DC
 2005 Symposium Speaker, Structural Analysis of Large Macromolecular Assemblies: Sizing up the Challenges, National Institutes of Health Workshop, Bethesda MD
 2005 Speaker, NIBIB/NIH Grantee Meeting, Washington DC
 2005 Seminar, University of Texas School of Medicine, Houston
 2006 Symposium Speaker, Synchrotron Radiation International, Daegu S. Korea
 2006 Symposium Speaker, Focus on Microscopy 2006, Perth Australia
 2006 Plenary Speaker, Biology & Medicine with Low Energy Synchrotron Radiation, Aarhus Denmark
 2006 Symposium Speaker, The Jackson Laboratory Course: Frontiers in Microscopy
 2006 Symposium Speaker, NIGMS/NIH Imaging Workshop, Bethesda MD
 2006 Speaker, Lehigh University Biological Imaging and Engineered Biosystems Workshop
 2006 Seminar, School of Chemistry and Biochemistry, Georgia Institute of Technology
 2007 Seminar, Department of Physics, University of California, Los Angeles
 2007 Invited Colloquium, Department of Physics, University of Wisconsin, Madison Wisconsin
 2007 Invited Plenary Speaker, Arizona Imaging and Microanalysis Society
 2007 Invited Speaker, Seeing is Believing: The Future of Molecular and Biomolecular Imaging Workshop, Duke University
 2007 Seminar, National Center for Biotechnology, Campus Universidad Autonoma, Madrid Spain
 2007 Invited Speaker, Facilitating X-ray Biophotonics Workshop, ARC Centre of Excellence for Coherent X-ray Science, Melbourne Australia
 2007 Invited Speaker, Gulliver Multiscale Bioimaging Workshop, Lawrence Berkeley National Laboratory, Berkeley CA
 2007 Invited Lecturer, X-ray Microscopy School, Erice Italy
 2007 Invited Speaker, X-ray Microscopy Workshop, Erice Italy
 2007 Invited Speaker, Workshop on STXM and X-ray Nanoprobe Capabilities and Needs for Geo-, Environmental, and Biological Sciences, Stanford University
 2007 Invited Speaker, NSLS-II User Workshop, Brookhaven National Laboratory, New York
 2007 Invited Speaker, Microscopy and Microanalysis 2007, Florida
 2007 Invited Speaker, Biology and Synchrotron Radiation, Manchester England
 2007 Invited Speaker, Workshop on Correlative Microscopy for 3-D Cell Imaging, Berlin Germany
 2007 Seminar, Department of Biochemistry, Rice University, Houston TX
 2007 Invited Lecturer, HERCULES course on Advances and New Applications of Synchrotron Radiation for Structural Biology, ESRF, Grenoble France
 2007 Invited Speaker, MIT Workshop: Frontiers in Modern Microscopy, Boston MA
 2008 Invited Speaker, Keystone Symposium: Frontiers of Structural Biology, Steamboat Springs CO
 2008 Invited Speaker, 5th Annual Advanced Imaging Visualizations in Biology, University of California, Berkeley, Berkeley CA
 2008 Invited Speaker, Gordon Conference - Three Dimensional Electron Microscopy
 2008 Invited Speaker, Gordon Conference - Methods in Structural Biology

2008 Invited Symposium Speaker, 9th International Conference on X-ray Microscopy, Zurich Switzerland

2008 Invited Symposium Speaker, Microscopy and Microanalysis 2008, New Mexico

2008 Invited Symposium Speaker, 14th European Microscopy Conference, Aachen Germany

2008 Invited Session Organizer and Speaker in 'X-ray and Electron Imaging' a Symposium on Visualizing Chemistry: Advances in Chemical Imaging, sponsored by the National Academy of Sciences

2008 Seminar, Drug Discovery Group at EMD-Serono, Boston MA

2008 Invited Symposium Speaker, 9th Asia-Pacific Microscopy Conference, Jeju Island, Korea

2008 Invited Speaker, Workshop on X-ray Microscopy, New Developments at Diamond, Oxford England

2008 Invited Speaker, Meeting on Correlative Microscopy, Karolinska Institute, Stockholm Sweden

2008 Seminar, Department of Physics, Royal Institute of Technology, Stockholm Sweden

2008 Seminar, La Trobe University, Melbourne Australia

2008 Seminar, Monash University, Melbourne Australia

2009 Invited Symposium Speaker, 'The Future of Microscopy: Breaking the Barriers;' Wellcome Trust, Cambridge England

2009 Seminar, Bioengineering Department, University of California, Davis

2009 Seminar, Laboratory of Molecular Biology, The Medical Research Council, Cambridge UK

2009 Invited Speaker, Single Cell Techniques Workshop, Cold Spring Harbor Laboratories

2009 Invited Speaker, 'Fluorescence Microscopy Beyond the Diffraction Limit', ACS Meeting, Wash DC

2009 Invited Speaker, 'Towards the Virtual Cell,' European Neuroscience Institute Goettingen, Germany

2010 Symposium Speaker, Structural Analysis of Supramolecular Assemblies by Hybrid Methods, Lake Tahoe CA

2010 Plenary Speaker, Joint Meeting of Biology and Synchrotron Radiation (BSR) and Medical Applications of Synchrotron Radiation (MASR), Melbourne Australia

2010 Symposium Speaker, Center for X-ray Science Workshop, Melbourne Australia

2010 Symposium Speaker, Novel Approaches to Bioimaging II, Conference organized by Howard Hughes Medical Institute Janelia Farm Research Campus

2010 International Meeting on the Physics of Single Molecule Processes and Molecular Recognition in Organic Systems, Germany (plenary talk)

2010 Symposium Speaker, Synchrotron Radiation for Bio-Imaging at PETRA III (at DESY)

2010 Seminar, Pacific Northwest National Laboratory Frontiers in Biological Sciences Seminar Series. Richland WA

2010 Seminar, University of California at Davis Teller Series in Interdisciplinary Science Seminar series, Davis CA

2010 Symposium Speaker, International Symposium on Diffraction in Structural Biology, Paris France

2010 Symposium Speaker, Developments in 3D Imaging for Biology Symposium at Microscience 2010, London England

2010 Symposium Speaker, Protein Society Meeting

2010 Symposium Speaker, International Microscopy Congress, Rio de Janeiro Brazil

2010 Seminar, ETH Zurich Department of Physics, Zurich

2010 Symposium Speaker, NIH-NIAID Meeting on Visualizing Macromolecular Complexes and Cellular Structures, Bethesda MD

2011 Symposium Speaker, Advanced Imaging Methods Workshop, University of California at Berkeley

2011 Seminar, Department of Physical Chemistry, University of Wisconsin, Madison

2011 Symposium Speaker, EMBO EMBL Symposium, 'Seeing is Believing - Imaging the Processes of Life, Heidelberg Germany

2011 Seminar, Department of Bioengineering, University of California, Santa Cruz

2011 Speaker, Microscopy Society of America, Nashville, Tennessee

2011 Speaker, Frontiers in Bioimaging, Manchester England

2011 Speaker, Physicists and Biologists Working Together: Facilitating X-ray Biophotonics, Melbourne Australia

2011 Speaker, Three-Dimensional Tomography of Materials, Boston, MA

- 2012 Symposium Speaker, Keystone Meeting, 'Structural Biology of Cellular Processes', Keystone CO
- 2012 Speaker, AAAS Annual Meeting, Vancouver, Canada
- 2012 Symposium Speaker, 6th International Conference on Structural Analysis of Supramolecular Assemblies by Hybrid Methods, Lake Tahoe CA
- 2012 Lecturer, XI Research Course on X-ray Science 2012, Hamburg Germany
- 2012 Speaker, Correlative Microscopy Webinar sponsored by Biophysical Society
- 2012 Symposium Speaker, 'Taking the World by STORM: Advances in Imaging for Materials and Biology', NSF, Amherst MA
- 2012 Symposium Speaker, Roadmap Epigenomics Program Investigators' Meeting, NIDA-NIH, Bethesda
- 2012 Lecturer, Cold Spring Harbor 'Single Cell Analysis' Course, CSH New York
- 2012 Symposium Speaker, Structural Biology Related to HIV-AIDS - 2012, NIGMS-NIH, Bethesda
- 2012 Symposium Speaker, Microscopy Society of America, Phoenix, Arizona
- 2012 Symposium Speaker, X-ray Bioimaging, Hsinchu Taiwan
- 2012 Speaker, Biophysics Society Meeting on Weak Protein-Ligand Interactions, Beijing China
- 2012 Platform Speaker, Dynamic Organization of Nuclear Function, Cold Spring Harbor
- 2012 Stanford Synchrotron Light Source Workshop
- 2012 Seminar, University of Nebraska School of Medicine
- 2102 Speaker, A 3D Cellular Context for the Macromolecular World, Cambridge UK
- 2013 Speaker, 9th Kavli Futures Symposium: The intersection of nanoscience and neuroscience at UC Berkeley
- 2013 Speaker, Keystone Meeting, 'Structural Analysis of Supramolecular Assemblies by Hybrid Methods'
- 2013 Speaker, 39th Lorne Conference on Protein Structure and Function, Lorne Australia
- 2013 Speaker, Lorne Infection and Immunity Conference, Lorne Australia
- 2013 Speaker, 11th International Conference on Biology and Synchrotron Radiation, Hamburg Germany
- 2013 Symposium Speaker, EMBL/EMBO Meeting, 'Seeing is Believing', Heidelberg Germany
- 2013 Seminar, Arizona State University School of Life Sciences
- 2013 Speaker, UCSF-LBNL Imaging Workshop, San Francisco, California
- 2013 Seminar, LBNL Integrated Bioimaging Initiative
- 2013 Seminar, Sanford-Burnham Medical Research Institute
- 2013 Seminar, Molecular Biophysics Discussion Group at UT Southwestern Medical Center
- 2013 Speaker, Annual AVS International Symposium and Exhibition
- 2013 Lecture, Cold Spring Harbor Single Cell Course
- 2013 Lecture, RACIRI Summer School, St. Petersburg Russia
- 2013 Platform Speaker, Wellcome Trust Meeting, 'Epigenomics of Common Diseases', Cambridge UK
- 2014 Speaker, 58th Annual Meeting of the Biophysical Society, 'Biophysics at the National Large Facilities', San Francisco California
- 2014 Platform Speaker, Keystone Symposium, 'Frontiers of Structural Biology', Snowbird Utah
- 2014 Seminar, Dept. of Biochemistry and Molecular Biology, Baylor College of Medicine, Houston Texas
- 2014 Seminar, Molecular and Cellular Biology Dept., University of California at Davis, Davis California
- 2014 Platform Speaker, Microscopy and Microanalysis 2014, 'Utilizing Microscopy for Research and Diagnosis of Diseases', Hartford Connecticut
- 2014 Lecture, Cold Spring Harbor Single Cell Course
- 2014 Platform Speaker, Cold Spring Harbor Laboratory Meeting, 'Nuclear Organization and Function' CSH New York
- 2014 Speaker, NCI-NIH Workshop, 'Multi-Scale Imaging for Integrative Cancer Biology', Houston Texas
- 2014 Keynote Speaker, International Workshop on EUV and Soft X-ray Sources, Dublin Ireland

PUBLICATIONS

Peer-reviewed

1. Larabell, C.A. and Capco, D.G. (1988). Role of calcium in the localization of maternal poly(A)+RNA and tubulin mRNA in *Xenopus* oocytes. *Roux's Arch. Dev. Biol.* 197, 175-183.
2. Larabell, C.A. and Chandler, D.E. (1988). Freeze-fracture views of the structural reorganization during meiotic maturation in *Xenopus laevis* oocytes. *Cell Tissue Res.* 251, 129-136.
3. Larabell, C.A. and Chandler, D.E. (1988). The extracellular matrix of *Xenopus laevis* eggs: A quick-freeze, deep-etch analysis of its modification at fertilization. *J. Cell Biol.* 107, 731-741.
4. Larabell, C.A. and Chandler, D.E. (1988). In vitro formation of the "S" layer, a unique component of the fertilization envelope in *Xenopus laevis* eggs. *Dev. Biol.* 130, 356-364.
5. Larabell, C.A. and Chandler, D.E. (1988). The coelomic envelope of *Xenopus laevis* eggs: A quick-freeze, deep-etch analysis. *Dev. Biol.* 131, 126-135.
6. Racowsky, C., Baldwin, K.V., Larabell, C.A., DeMarais, A., and Kazilek, C. (1989). Down-regulation of membrana granulosa cell gap junctions occurs concomitant with irreversible commitment to resume meiosis in Golden Syrian Hamster oocytes. *Eur. J. Cell Biol.* 49, 244-251.
7. Larabell, C.A. and Chandler, D.E. (1989). Quick-freeze, deep-etch, rotary-shadow views of the extracellular matrix and cortical cytoskeleton of *Xenopus laevis* eggs. *J. Electron Microsc. Tech.* 13, 228-243.
8. Larabell, C.A. and Chandler, D.E. (1990). Step-wise transformation of the vitelline envelope of *Xenopus* eggs at activation: A quick-freeze, deep-etch analysis. *Dev. Biol.* 139, 263-268.
9. Dersch, M.A., Bement, W.M., Larabell, C.A., Mecca, M.D., and Capco, D.G. (1991). Cortical membrane trafficking during the meiotic resumption of *Xenopus laevis* oocytes. *Cell and Tissue Res.* 263, 375-383.
10. Larabell, C.A. and Chandler, D.E. (1991). Fertilization-induced changes in the vitelline envelope of echinoderm and amphibian eggs: self-assembly of an extracellular matrix. *J. Electron Microsc. Tech.* 17, 294-318.
11. Smith, N.R., Benson, S., and Larabell, C. (1991). An in vitro extracellular matrix model system to visualize whole cells with Intermediate Voltage Electron Microscopy (IVEM). *J. Electron Microsc. Tech.* 19, 380-381.
12. Larabell, C.A. and Nuccitelli, R. (1992). Inositol lipid hydrolysis contributes to Ca²⁺ wave propagation in the activating *Xenopus* egg. *Dev. Biol.* 153, 347 - 355.
13. Lindsay, L.L., Larabell, C.A. and Hedrick, J.L. (1992). Localization of a chymotrypsin-like protease to the perivitelline space of *Xenopus laevis* eggs. *Dev. Biol.* 154, 433-436.
14. Capco, D.G., Gallicano, G.I., McGaughey, R.W., Downing, K.H., and Larabell, C.A. (1993). Cytoskeletal sheets of mammalian eggs and embryos: A lattice-like network of intermediate filaments involved in the establishment of blastomere polarity. *Cell Motil. and Cytoskel.* 24, 85-99.

15. Larabell, C.A., Epstein, W.L. and Fukuyama, K. (1993). Desmosome differentiation and cornification in epidermis: New observations obtained from intermediate voltage electron microscopy. *J. Invest. Derm.* 101, 103-104.
16. Bonnell, B.S., Larabell, C. and Chandler, D.E. (1993). The sea urchin egg jelly coat is a three-dimensional fibrous network as seen by intermediate voltage EM and deep etching analysis. *Mol. Rep. Dev.* 35, 181-188.
17. Larabell, C.A. (1993). A new technique for isolation and visualization of the *Xenopus* egg cortex reveals a complex cytoskeleton. *J. Struct. Biol.* 110, 454-459.
18. Gallicano, G.I., Larabell, C.A., McGaughey, R.W. and Capco, D.G. (1994). Novel cytoskeletal elements in mammalian eggs are composed of a unique arrangement of intermediate filaments. *Mech. of Dev.* 45, 211-226.
19. Larabell, C.A. (1995). Cortical cytoskeleton of the *Xenopus* oocyte, egg, and early embryo. *Current Topics in Dev. Biol.* 31, 433-453.
20. Larabell, C.A., Rowning, B.A., Wells, J. Wu, M. and Gerhart, J.C. (1996). Confocal microscopy analysis of living *Xenopus* eggs and the mechanism of cortical rotation. *Development.* 122, 1281-1289.
21. Kloc, M., Larabell, C., and Etkin, L.D. (1996). Elaboration of the messenger transport organizer pathway for localization of RNA to the vegetal cortex of *Xenopus* oocytes. *Dev. Biol.*, 180, 119-130.
22. Rowning, B.A., Wells, J., Wu, M. Gerhart, J.C., Moon, R.T., and Larabell, C.A. (1997). Microtubule-mediated transport of organelles and localization of β -catenin to the future dorsal side of *Xenopus* eggs. *Proc. Natl. Acad. Sci.* 94, 1224-9.
23. Larabell, C.A. Torres, M., Rowning, B.A., Yost, C., Miller, J.R., Wu, M., Kimelman, D., and Moon, R.T. (1997). Establishment of the dorso-ventral axis in *Xenopus* embryos is presaged by early asymmetries in β -catenin which are dependent upon regulated protein stability. *J. Cell Biol.* 136(5), 1123-1136.
24. Weaver, V.M., Petersen, O.W., Wang, F., Larabell, C.A., Briand, P., Damsky, C. and Bissell, M.J. (1997). Reversion of the malignant phenotype of human breast cells in 3-dimensional culture and in vivo using integrin blocking antibodies. *J. Cell Biol.* 137(1), 231-246.
25. Krauss, S.W., Larabell, C.A., Lockett, S., Gascard, P., Penman, S., Mohandas, N., and Chasis, J.A. (1997). Structural protein 4.1 in the nucleus of human cells; dynamic rearrangements during cell division. *J. Cell Biol.* 137, 275-290.
26. Larabell, C. A., Torres, M., Rowning, B. A., Yost, C., Miller, J. R., Wu, M., Kimelman, D., and Moon, R. T. (1997). Establishment of the dorso-ventral axis in *Xenopus* embryos is presaged by early asymmetries in beta-catenin that are modulated by the Wnt signaling pathway. *J. Cell Biol.* 136, 1123-36.
27. Rowning, B. A., Wells, J., Wu, M., Gerhart, J. C., Moon, R. T., and Larabell, C. A. (1997). Microtubule-mediated transport of organelles and localization of beta-catenin to the future dorsal side of *Xenopus* eggs. *Proc. Natl. Acad. Sci.* 94, 1224-1229.
28. Weaver, V. M., Petersen, O. W., Wang, F., Larabell, C. A., Briand, P., Damsky, C., and Bissell, M.J. (1997). Reversion of the malignant phenotype of human breast cells in three-dimensional culture and in vivo by integrin blocking antibodies. *J. Cell Biol.* 137, 231-45.

29. Wang, F, Weaver, V, Petersen, O, Larabell, CA, Dedhar, S, Briand, P, Lupu, R, & Bissell, MJ. (1998). Reciprocal interactions between beta1-integrin and epidermal growth factor receptor in three-dimensional basement membrane breast cultures: a different perspective in epithelial biology. *Proc. Natl. Acad. Sci.* 95, 14821-6.
30. Kloc, M., Larabell, C., Chan, P.A., and Etkin, L. D. (1998). Contribution of METRO pathway localized molecules to the organization of the germ cell lineage. *Mech. of Develop.* 75, 81-93.
31. Lelièvre, S. A., Weaver, V. M., Nickerson, J. A., Larabell, C. A., Bhaumik, A., Petersen, O. W., and Bissell, M. J. (1998). Tissue phenotype depends on reciprocal interactions between the extracellular matrix and the structural organization of the nucleus. *Proc. Natl. Acad. Sci. USA* 95, 14711-6.
32. Miller, J. R., Rowning, B. A., Larabell, C. A., Yang-Snyder, J. A., Bates, R. L., and Moon, R. T. (1999). Establishment of the dorsal-ventral axis in *Xenopus* embryos coincides with the dorsal enrichment of Dishevelled that is dependent on cortical rotation. *J. Cell Biol.* 146, 427-438.
33. Kozek, W.J., Nair, A., Denbeaux, G., Brown, J., Larabell, C., and Meyer-Ilse, W. (2000). Application of soft X-ray and other microscopy techniques to elucidate the structure of *Trichinella spiralis* newborn larva. *Acta Parasitologica.* 45, 157.
34. Nakamura, H., Wu, C., Kuang, J., Larabell, C., and Etkin, L.D. (2000). XCS-1, A Maternally Expressed Gene Product Involved in Regulating Mitosis in *Xenopus*. *J. Cell Sci.* 113, 2497-2505.
35. Taunton, J., Rowning, B.A., Coughlin, M., Wu, M., Moon, R.T., Mitchison, T.J., and Larabell, C.A. (2000). Actin-dependent propulsion of endosomes and lysosomes by recruitment of N-WASP. *J. Cell Biol.* 148, 519-530.
36. Meyer-Ilse, W., Hamamoto, D., Nair, A., Lelievre, S.A., Denbeaux, G., Johnson, L., Pearson, A.L., Yager, D., LeGros, M.A., and Larabell, C.A. (2001). High Resolution Protein Localization Using Soft X-ray Microscopy. *J. Microsc.* 201, 395-403.
37. Ziegelbauer, J., Shan, B., Yager, D., Larabell, C., Hoffmann, B., and Tjian, R., (2001). Transcription factor MIZ-1 is regulated via microtubule association. *Molecular Cell.* 8, 339-349.
38. Denbeaux G., Anderson E., Chao W., Eimuller T., Johnson L., Kohler M., Larabell, C., Legros, M., Fischer, P., Pearson, A., Schultz, G., Yager, D., and Attwood, D. (2001). Soft X-ray microscopy to 25 nm with applications to biology and magnetic materials. *Nuclear Instruments & Methods in Physics Res.* 2001;467:841-44.
39. Parak, W. J., Boudreau, R., Le Gros, M. A., Gerion, D., Zanchet, D., Micheel, C. M., Williams, S. C., Alivisatos, A. P. and Larabell, C. A. (2002). Cell motility and metastatic potential studies based on Quantum Dot imaging of phagokinetic tracks. *Advanced Materials.* 14, 882-885.
40. Schneider, G., Anderson E., Vogt, S., Knochel, C., Weiss, D., Le Gros, M., and Larabell, C. (2002). Computed tomography of cryogenic cells. *Surface Review and Letters* 9, 177-183.
41. Parak W. J., Gerion D., Pellegrino T., Zanchet D., Micheel C. M., Williams S. C., Boudreau R., Le Gros M. A., Larabell C. A. & Alivisatos A. P.(2002). Biological applications of colloidal nanocrystals. *J. Nanosci. & Nanotech.* 14, 882-885.

42. Miao, J. Hodgson, K. O., Ishikawa, T., Larabell, C. A., LeGros, M. A., and Nishino, Y. (2003). Imaging whole *Escherichia coli* bacteria using single particle x-ray diffraction. *Proc. Natl. Acad. Sci. USA.* 100, 110-112.
43. Parak, W. J., Gerion, D., Pellegrino, T., Zanchet, D., Micheel, C., Williams, S. C., Boudreau, R., Le Gros, M. A., Larabell, C. A., and Alivisatos, A. P. (2003). Biological applications of colloidal nanocrystals. *Nanotechnology*, 14, R1-R13.
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Book Chapters

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PATENTS ISSUED OR PENDING

Patents Issued

U.S. Patent #8039438	Synthetic peptides that case F-actin bundling and block actin depolymerization
U.S. Patent #7822174	Cryotomography X-ray Microscopy Stage
U.S. Patent #7852554	Cryogenic Immersion Microscope

Patents Pending

Application #20030113709	Semiconductor Nanocrystal-Based Cellular Imaging
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