

John P. Nolan, Ph.D.

Laboratory Address

La Jolla Bioengineering Institute
3535 General Atomics Court
San Diego, CA 92121
Office: (858)-456-7500 x110
FAX: (858)-456-7540
jnolan@ljbi.org

Home Address

5746 Waverly Ave
La Jolla, CA 92037
Cell : (858)-864-4100
FAX: (858)-551-0832
jpn999@gmail.com

Education

The Pennsylvania State University,
University Park, PA
University of Illinois, Urbana, IL

Ph.D. 1992 Biochemistry
B.S. 1987 Biology, Chemistry

Professional Experience

Professor, 2004-present
La Jolla Bioengineering Institute
Director and PI, National Flow Cytometry Resource, 2001-2004
Bioscience Division, Los Alamos National Laboratory
Member, Cancer Research and Training Center, 2002-2004
School of Medicine, University of New Mexico
Adjunct Professor, Department of Pathology, 1999-2004
School of Medicine, University of New Mexico
Technical Staff Member, 1996-2004
Bioscience Division, Los Alamos National Laboratory
Postdoctoral Researcher, 1993-1996
Life Sciences Division, Los Alamos National Laboratory
Postdoctoral Researcher, 1992-1993
Dept. of Chemical Engineering, The Pennsylvania State University
Graduate Research Assistant, 1987-1992
Dept. of Molecular and Cell Biology, The Pennsylvania State University

Honors, Awards

President, International Society for Advancement of Cytometry (ISAC), 2012-2014
Fellow, American Institute for Medical and Biological Engineering, elected 2006
Outstanding Mentor Award, LANL, 2003
Distinguished Performance Award, LANL, 1999
Presidential Award for Excellence, International Society for Analytical Cytology, 1996
Deutcher Award, Penn State University, 1990
Graduate Research Award, Penn State University, 1989

Funding History

Principal Investigator, CRADA - "High Resolution Analysis of Cell Derived Nanovesicles" (2012-2013) Amgen, \$200,000/year, total costs
Principal Investigator: NIH R01-EB003824, "Raman Flow Cytometry for Drug Discovery and Diagnostics" (2010-2015), Bioengineering Research Partnership, ~\$6,427,000 total costs over 5 years (Years 6-10).
Principal Investigator: DOD Global Epidemic Surveillance Program "Multiplexed Analysis of Influenza Virus Antibodies" (2009-2010), Sub-contract from Naval Health Research Lab, San Diego, \$112,237 total costs.
Principle Investigator: NIH 1S10RR22330, "Becton Dickenson FACSAria Cell Sorter" (2006) Shared Instrument Grant, \$431,048 direct costs.
Principal Investigator: NIH R01-EB003824, "Raman Flow Cytometry for Drug Discovery and Diagnostics" (2004-2009), Bioengineering Research Partnership, ~\$6,399,133 total costs over 5 years (Years 1-5).

Principal Investigator: Cooperative Research and Development Agreement (CRADA) – “Development of Phase Resolved Fluorescence Detection”, (2004), Advanced Cytometry Instrumentation Systems, \$75,000 total costs.

Principal Investigator: CRADA – “Non-invasive Detection of Bacteria in Blood” (2003-2005), APD Life Sciences, \$100,000/year total costs for 2 years.

Principal Investigator: CRADA – “Flow Sorting of Rat Y Chromosome” (2003), Agencourt Biotechnologies, \$30,000 total costs.

Principal Investigator: NIH P41-RR01315, "National Flow Cytometry and Sorting Resource" (2002-2004), \$764,547/year direct costs.

Principal Investigator: Laboratory Directed Research and Development (Los Alamos National Laboratory competitive internal funding), “Magnetization and Fluorescence Measurements of Particles in Flowing Streams” (2001-2003). \$220,000/year total costs.

Principal Investigator: DOE Chemical and Biological Non-Proliferation Program “Rapid Pathogen Detection Using Microsphere-Based Flow Cytometry” (2000-2002) \$350,000/year total costs.

Principal Investigator: CRADA – “Multiplexed Genotyping of Cardiovascular Risk Factors” (2001-2002), Genematrix Corp, \$60,000.

Principal Investigator: NIH R01-RR14101, "High Throughput SNP Discovery and Scoring Using Flow Cytometry" (1999-2001), \$563,737 direct costs over 3 years.

Co-Investigator: NIH P41-RR01315, "Microsphere-Based Approaches to Molecular Assembly" (1997-2002), \$120,000/year direct costs. National Flow Cytometry Resource, Jim Jett, Program PI.

Principal Investigator: Laboratory Directed Research and Development, "Rapid Genotyping Assay for Beryllium Disease Susceptibility" (1998-2000). \$120,000/year total costs.

Professional Service - Society

President: International Society for Advancement of Cytometry (ISAC), 2012-2014

Chair, Standards Committee: ISAC, 2008-2012

Chair, Scientific Advisory Committee: ISAC, 2004-2008

Member, Scientific Advisory Committee: ISAC, 2002-2004

Councilor (elected): ISAC, 2002-2006

Member, International Society for Advancement of Cytometry

Member, International Society for Thrombosis and Hemostasis

Member, American Chemical Society

Member, American Institute of Medical and Biological Engineering

Professional Service - Editorial

Editorial Board: Cytometry, 2007-present

Editorial Board: Current Protocols in Cytometry, 2005 - present

Editorial Board: International Journal of High Throughput Screening, 2009-present

Guest Editor: Cytometry, Special Issue on Microsphere and Microparticle Analyses, 2006

Editorial Board: Journal of Fluorescence, 2001 – 2010

Reviewer: *ACS Nano*; *Analytica Chimica Acta*; *Analytical Chemistry*; *Biochemical Journal*; *Biochemistry*; *Biochimica et Biophysica Acta*; *Biology of Reproduction*; *Biomedical Optics Express*; *BioTechniques*; *BMC Biotechnology*; *Chemical Reviews*; *Clinical Cytometry*; *Clinica Chimica Acta*; *Current Protocols in Cytometry*; *Cytometry*; *Environmental Microbiology and Environmental Microbiology Reports*; *Expert Opinion on Drug Discovery*; *Future Medicine*; *Genome Research*; *Human Mutation*, *Journal of Andrology*; *Journal of the Association for Laboratory Automation*; *Journal of Biomedical Optics*; *Journal of Biotechnology*; *Clinical and Diagnostic Laboratory Immunology*; *Journal of Fluorescence*; *Journal of Reproduction and Fertility*; *Journal of Physical Chemistry*; *Langmuir*; *Methods*; *Nanomedicine*; *Nature Biotechnology*; *Nature Methods*; *Nature Nanotechnology*; *Nature Photonics*; *Nucleic Acids Research*; *Physical Reviews Letters*; *PLOS One*; *Proceedings of the National Academy of Science, USA*; *Reproduction, Fertility, and Development*; *Surface and Interface Analysis*; *Talanta*

Professional Service – Grant Review

Chair, NIH, ZAI1 LG-M-J2 NIAID Biodefense, September 2012
 Member, NIH, ZRG1 CB D(50)R, Single Cell Analysis, May, 2012
 Member, NIH, ZAI1-ESB-M-J2 NIAID Diagnostics, November 2011
 Member, NIH, ZAI1-FDS-M-1 NIAID Biodefense, September 2011
 Member, NIH, NIAAA SBIR SEP ZAA1-GG(01), March 2011
 Member, NIH, Biodefense Diagnostics ZAI1-BLG-M-M1, ZAI1-BLG-M-M2, February 2011
 Chair, NIH, Shared Instrument Grants ZRG1 CB-J (30), July 2010
 Member, NIH, Director's Opportunity for Research (RC4) ZRG1 CB-B (55) R Stage 1, June 2010
 Member, NIH, Instrument Development for Biomedical Applications ZRR1 BT-7 (01), March 2010
 Chair, NIH, Shared Instrument Grants ZRG1 CB-J (31), October 2009
 Member, Ontario Research Fund, Scientific Merit Review, October 2009
 Member, RusNano, Scientific Merit Review, August 2009
 Member, NIH, Biotechnology Fellowship ZRG1 F14-C (20) I, July 2009
 Member, NIH, Instrument and System Development (ISD) IRG, June 2009
 Member, NIH, Challenge Grants in Health and Science Research, June 2009
 Member, NIH, Biomedical Technology Center NIH ZRR1 BT-9 (01) 1 X02, May 2009
 Member, NIH, Instrument Development for Biomedical Applications ZRR1 BT-7 (01), March 2009
 Member, Netherlands Organisation for Scientific Research, Chemical Sciences Division, Feb. 2009
 Member, Wellcome Trust, Equipment, Technology Develop & Biomedical Resources, Nov. 2008
 Chair, NIH, Biomedical Technology Resource Center P41 Site Visit, July 2007
 Member, NIH, NIBIB Quantum Grants ZEB1 OSR-C (01) R, June 2007
 Member, NIH, Program Project SEP ZEB1 OSR-C J1 (P), November 2006
 Member, NIH, NIBIB Quantum Grants SEP ZEB1 OSR-C (01) (P), June 2006
 Member, NIH, Shared Instrument Grants ZRG1 BCMB-P (30) (S), August 2006
 Member, NSF, Scientific Merit Reviewer, 2005
 Member, Netherlands Org for Scientific Research, Innovational Research Incentives Scheme, August 2005
 Member, NIH, Biomedical Technology Resource Center P41 Reverse Site Visit, April 2005
 Chair, NIH, Bioengineering Research Partnership SEP ZRG1, July 2004
 Chair, NIH, Biomedical Technology Resource Center P41 Site Visit, April 2004
 Chair, NIH, NIEHS SBIR Special Emphasis Panel, 2004
 Member, NIH, Biomedical Technology Resource Center P41 Review, July 2003
 Member, LANL, Laboratory Directed Research and Development, Chem & Bio Tech Panel, May 2003
 Member, NIH, Biomedical Information Science and Technology Initiative SSS-H(91), February 2003
 Member, French Ministry of Research, Scientific Merit Review, February 2003
 Member, NIH, Biomedical Information Science and Technology Initiative, SSS-H October 2002
 Member, LANL, Laboratory Directed Research and Development, Engineering Panel, May 2002
 Member, NIH, NIEHS SBIR Special Emphasis Panel, April 2001
 Member, LANL, Laboratory Directed Research and Development, Engineering Panel, May 2001
 Member, LANL, Laboratory Directed Research and Development, Biology Panel, July 2000
 Member, LANL, Laboratory Directed Research and Development, Biology Panel, June 1999

Teaching Experience: Courses and Short-courses

Flow Cytometry of Microvesicles and Nanoparticles (Tutorial, Leipziger Cytomics Workshop, March, 2012)
 Microparticles, Multiplexing, and More (Lecture, Annual Course in Flow Cytometry, UNM, June 2011)
 Blood Biophotonics (Lecture, Photonics in Everyday Life, ECE80, UCSD, Winter 2010)
 Microparticles, Multiplexing, and More (Lecture, Annual Course in Flow Cytometry, UNM, June 2009)
 Blood Biophotonics (Lecture, Photonics in Everyday Life, ECE80, UCSD, Winter 2009)
 Blood Biophotonics (Lecture, Photonics in Everyday Life, ECE80, UCSD, Spring 2008)
 Optical Measurements in Flow (Lecture, Advanced Biophotonics, BENG247A, UCSD, Fall 2007)
 Multiplexed and Microsphere-based Analysis (Lecture, Annual Course in Flow Cytometry, LANL June 2007)
 Flow Cytometry Calibration and Standardization (Lab, Annual Course in Flow Cytometry, LANL June 2007)
 Blood Biophotonics (Lecture, Photonics in Everyday Life, ECE80, UCSD, Spring 2007)
 Multiplexed Molecular Analysis (Lecture and labs, Annual Course in Flow Cytometry, LANL, June 2005)
 Flow Cytometry (Lecture, Biological Transport Phenomenon, BENG253, UCSD, Winter 2005)

Molecular Biology and Microspheres (Lecture, the Latex Course, San Diego, September 2004)
 Microsphere-Based Molecular Analysis (Tutorial, ISAC XXII Congress, Montpellier, France, May 2004)
 Multiplexed Molecular Analysis (Lecture and labs, Annual Course in Flow Cytometry, LANL, June 2003)
 Molecular Cytometry (Lecture, Clinical Cytometry Course, Northwestern University, Aug 2002)
 Microsphere-based Analysis Using Flow Cytometry (Lecture, The Latex Course, Indianapolis, June 2002)
 Multiplexed Molecular Analysis (Lecture, Annual Course in Flow Cytometry, Bowdoin College, June 2002)
 Microsphere-Based Genetic Analysis (Tutorial, ISAC XXI Congress, San Diego, May 2002)
 Kinetic and High Throughput Analyses (Lecture and lab, Annual Course in Flow Cytometry, LANL June 2001)
 Kinetic and High Throughput Analyses (Lecture and lab, Annual Course in Flow Cytometry, LANL June 1999)
 Kinetic Analysis of Cells and Molecules (Lecture and lab, Annual Course in Flow Cytometry, LANL June 1997)
 Kinetic Analysis of Cells and Molecules (Lecture, Annual Course in Flow Cytometry, LANL June 1997)
 Kinetic Analysis of Cells and Molecules (Lecture, Annual Course in Flow Cytometry, LANL June 1995)
 Membrane Biochemistry (Lectures, PSU Fall 1992)
 Biochemical Methods (Teaching Assistant, PSU Fall 1990)
 Introduction to Techniques of Molecular and Cell Biology (Teaching Assistant, PSU Spring 1988, 1989)

Graduate/Post-graduate Trainees

Dr. Er Liu (Post-doctoral researcher, 2011-present)
 Dr. David Sebba (Post-doctoral researcher, 2008-2009) – Currently: Research Scientist, NanoComposix, Inc.
 Mr. Neil Bonzagni – University of North Carolina (MPH student, 2008)
 Dr. Loretta Yang (Post-doctoral researcher, 2005-2007) – Currently: Research Scientist, National University of Ireland, Galway
 Ms. Anna Bergstrom - Chalmers Technical University – Gothenberg, SE (MS student, 2003-2004)
 Dr. Alina Deshpande – University of New Mexico (Ph.D student, 1998-2003) – Currently: Technical Staff Member, Los Alamos National Lab
 Dr. Feng Zhou (Post-doctoral researcher, 1999-2002) – Currently: Biophoretics, Inc.
 Dr. Steven Graves (Post-doctoral researcher, 1999-2001) – Currently: Associate Professor, Department of Chemical and Nuclear Engineering, University of New Mexico
 Dr. Sabine Lauer (Post-doctoral researcher, 1997-2001) – Currently: Technical Staff Member, LANL

Undergraduate Trainees

Sita Kumar – University of California, San Diego (2012)
 Krishna Naik – University of California, San Diego (2012)
 Rohit Sabnis – University of California, San Diego (2012)
 Jessica Van Allen - University of California, San Diego (2012)
 Shom Bhandari – University of California, San Diego (2012)
 Komail Haidar – University of California, San Diego (2012)
 Johnny Kim – University of California, San Diego (2012)
 Jaclyn Walker – University of California, San Diego (2012)
 Ben Farnos – University of California, San Diego (2011)
 Connie Lu – University of California, San Diego (2010)
 Olga Souverneva – University of California, San Diego (2010)
 Danilo Condello - University of California, San Diego (2010)
 Sam Stoner – University of California, San Diego (2010)
 Christine Vu – University of California, San Diego (2010)
 Mahin Kahn – University of California, San Diego (2010)
 Qian Zhao – University of California, San Diego (2010)
 Jessica Kwan – University of California, San Diego (2010)
 Kenneth Stapleton – University of California, San Diego (2010)
 Vikram Chauha – University of California, San Diego (2010)
 Michael Ballesteros – University of California, San Diego (2010)
 Denise Choi - University of California, San Diego (2010)
 Isha Dave - University of California, San Diego (2009)
 Brian Pearson - University of California, San Diego (2009)
 Alexander Saal – University of California, San Diego (2009)

Grace Jang - University of California, San Diego (2009)
 Gurraj Bedi - University of California, San Diego (2009)
 Demosthenes Morales - University of California, San Diego (2008)
 Andrew Chen – University of California, San Diego (2008)
 Sruti Kumar – University of California, San Diego (2008)
 Peter Struss – University of California, San Diego (2008)
 Christine Do – University of California, San Diego (2007)
 Miguel Vargas – University of California, San Diego (2006)
 Zev Binder – University of California, Davis (2002)
 See-Young Lee – University of Illinois, Urbana-Champaign (2002)
 Carrie Harrington - University of Tennessee (2002)
 Wesley Solomon – Morehouse College (2002)
 Christy Keenan - Massachusetts Institute of Technology (2001)
 Keith Corbino – Cornell University (2000)
 James Tanyi – US Military Academy West Point (1999)
 Yamil Gerena-Lopez - University of Puerto Rico (1998)
 Mike McGuire - US Air Force Academy (1998)
 Sharon Compton – University of Florida (1998)
 John Morris - US Military Academy West Point (1997)
 Anna Nogar - University of New Mexico (1997)

Sabbatical and Visiting Scientists

Dr Gary Killian – Penn State University (2000)
 Dr Raymond Erikson – Harvard University (1998)

Invited Lectures and Presentations

"Sperm Membrane Structure and Function" Liposome Research Laboratory, University of British Columbia, Vancouver, B.C. (September 1992).
 "Dynamic DNA Packaging" Life Sciences Division, Los Alamos National Laboratory (March 1993).
 "Mechanisms of Molecular Assembly" ICOS Corporation, Bothell, WA (July 1996).
 "Analysis of Molecular Assembly by Flow Cytometry" School of Medicine, University of New Mexico (September 1996).
 "Real-Time Analysis of Molecular Assembly Using Flow Cytometry" Dept of Bioengineering, University of California San Diego (August 1997)
 "Analysis of Molecular Interactions in Living Cells" Axiom Biotechnologies, La Jolla, CA (August 1997)
 "Real-Time Analysis of Macromolecular Assembly and Function Using Flow Cytometry" Dept of Biochemistry and Molecular Biology, Penn State University (September 1997)
 "Analysis of Molecular Assembly Using Flow Cytometry: Genomics Applications" Affymax Research Institute, Santa Clara, CA (January 1998)
 "Molecular and Genetic Analyses Using Flow Cytometry" Dept of Physiology, University of Puerto Rico (October 1999)
 "Molecular and Genetic Analyses Using Flow Cytometry" Dept of Pharmacology and Experimental Therapeutics, Mayo Medical School (December 1999)
 "Molecular and Genetic Analyses Using Flow Cytometry" Becton Dickinson Biosciences, San Jose, CA (January 2000)
 "Real Time Analysis of Molecular Assembly Using Flow Cytometry" Royal Microscopy Society Flow 2000 Conference, York, UK (September 2000)
 "Genotyping of Single Nucleotide Polymorphisms by Flow Cytometry" Royal Microscopy Society Flow 2000 Conference, York, UK (September 2000)

- "Microbead Technology: A New Dimension for Flow Cytometry", Special Guest Lecture, Royal Microscopy Society Flow Cytometry Course, University of Sheffield, UK (September 2000)
- "High Throughput Genomic Analysis using Multiplexing Microsphere Arrays (GAMMArrays) and Flow Cytometry" IBC Nucleic Acid Detection and Screening Technologies, San Diego, CA (September 2000)
- "Molecular and Genetic Analyses Using Flow Cytometry" Laboratory Centre for Disease Control, Health Canada, Ottawa, Canada (October 2000)
- "Molecular and Genetic Analyses Using Flow Cytometry" RCMI International Symposium on Health Disparities, San Juan, PR (November, 2000)
- "Soluble Microarrays: Evolution of the Flat Chip Paradigm" HPCE2001, Boston, MA (January 2001)
- "High Throughput Genomic and Proteomic Analysis" Life Sciences Consortium, Penn State University (April 2001)
- "Molecular Analysis by Flow cytometry" NSF Workshop: Advanced Instrumentation for the New Millennium, University of Arizona (December, 2001)
- "Biosensor Platforms and Assays" BTR 2002: Unified Science & Technology for Reducing Biological Threats & Countering Terrorism, University of New Mexico (March, 2002)
- "Microsphere-based Molecular Analysis Using Flow Cytometry" The Latex Course, Indianapolis, IN (June 2002)
- "Technologies for Predisposition" Panel Discussion, NIH BECON Symposium: Sensors for Biological Research and Medicine, Bethesda, MD (June, 2002)
- "Molecular Cytometry: New Approaches to the Analysis of Molecular Assemblies" Department of Chemistry, Purdue University (October, 2002)
- "Molecular Cytometry: High Throughput Genomic and Proteomic Analysis" La Jolla Bioengineering Institute (January, 2003)
- "Molecular Cytometry: Genetic and Genomic Applications" Danish Society for Flow Cytometry Symposium on Microarray Technology, Copenhagen (April 2003)
- "Molecular Cytometry: Genetic and Genomic Applications" San Diego Flow Cytometry Users Group (June, 2003)
- "Molecular Cytometry: New Approaches to Large Scale Cell and Molecular Analysis" Children's Hospital of Oakland Research Institute, CHORI (April 2004)
- "Molecular Cytometry: New Approaches to Large Scale Cell and Molecular Analysis" University of California, Davis (April 2004)
- "Flow Futures: New Analytical Challenges in Biology and the Technologies to Meet Them" Chesapeake Cytometry Consortium Symposium, Bethesda, MD (September, 2004)
- "Molecular Biology and Microspheres" The Latex Course, San Diego, CA (September 2004)
- "Flow Technology and the Study of Bacterial Protein Toxins" Great Lakes International Imaging and Flow Cytometry Association Annual Meeting, Milwaukee, WI (October, 2005)
- "High Throughput Molecular Analysis Using Microsphere Arrays" Stem Cells in the Age of Fluorescence Technology 5th Samuel A. Latt Conference, Goldcoast, Queensland, Australia (November, 2005)
- "Extending the Reach of Flow-based Analysis: Instrumentation for Spectroscopy and Nanotechnology" San Diego Flow Cytometry Users Group (March, 2006)
- "State of the Science in Flow Cytometry for Rapid and Unattended Multi-agent Detection" Defense Threat Reduction Agency Biotechnology Workshop (June, 2006)
- "Sweating the Small Stuff: Flow Cytometry for the Quantitative Analysis of Natural and Synthetic Nanoparticles" 2007 Northwest Cytometry Meeting (March 2007)

- "Molecular Cytometry: Extending the Capabilities of Flow-based Analysis" The Burnham Institute for Medical Research (September, 2007)
- "Cytometry and Nanomedicine" First International Symposium on Applied Nanomedicine, Qatar Foundation, Doha, Qatar (March, 2008)
- "Raman Spectroscopy Meets Flow Cytometry: High Speed Multiplexed Cell and Biomolecular Analysis" Department of Chemistry, University of Alberta (April, 2008)
- "Single particle Raman spectroscopy in flow: Making the most of the spectrum for multiparameter analysis" Microscopy and Microanalysis, Albuquerque, NM (August, 2008)
- "Single particle Raman spectroscopy in flow: Making the most of the spectrum for multiparameter analysis" Department of Bioengineering, University of California, Riverside (November, 2008)
- "Molecular Analysis of the Host-Pathogen Interface: Multiplexed Approaches for a System-wide View" Huck Institutes of the Life Sciences, Penn State University (July, 2009)
- "Quantitative Analysis of Glycan-Receptor Interactions using Microspheres and Flow Cytometry" Consortium for Functional Glycomics Workshop, National Institutes of Health (October 2009)
- "Raman Flow Cytometry: Cell Measurements Beyond 20 Parameters" Torrey Pines Optical Technology Symposium, The Scripps Research Institute (November, 2009)
- "SERS Cytometry for High-Content Analysis: More Parameters for Less" High Content Analysis, Cambridge Healthtech, San Francisco, CA (January, 2010)
- "Screening and Systems Cytometry: More Samples, More Parameters" AAAS Science Webinar, <http://webinar.sciencemag.org/webinar/archive/next-generation-cell-analysis> (March, 2010)
- "Multiplexed Analysis of Antibody-Antigen Interactions" Sorrento Therapeutics, San Diego, CA (March, 2010)
- "SERS Cytometry for High-Content Analysis: More Parameters for Less" Experimental Biology 2010, Anaheim, CA (April, 2010)
- "SERS Cytometry: More Parameters for Less" CYTO 2010 Plenary Session, Seattle, WA (May, 2010)
- "Multiplexed Analysis of Antibody-Antigen Interactions" AnaptysBio, San Diego, CA (June, 2010)
- "Engineering SERS Tags for Cytometry" FACSS Symposium, Raleigh, NC (October, 2010)
- "Approaches to Microparticle Analysis to Assess Endothelial Dysfunction" Amgen, Thousand Oaks, CA (December, 2010)
- "Cytometry Technologies for the Measurement of Antigen-specific Immune Responses" La Jolla Institute for Allergy and Immunology (June, 2011)
- "Quantitative and Multiplexed Measurement of Glycan-Receptor Interactions" Carbohydrates Gordon Research Conference, Waterville, ME (June, 2011)
- "Flow Cytometry of Nanoparticles" Robert Spencer Memorial Lecture, flowcytometryUK, York, UK (July, 2011)
- "Surface Enhanced Raman Scattering (SERS) Cytometry" Biomedical Engineering Dept, UC Irvine (November, 2011)
- "Multiplexing in Diagnostics and Discovery" Pathology Grand Rounds, School of Medicine, University of New Mexico (March, 2012)
- "Spectroscopy, Nanoparticles, and Cytometry" Southeast Flow Cytometry Interest Group, Mobile, AL (March, 2012)
- "Surface Enhanced Raman Scattering (SERS in Cytometry" Keynote Lecture, Leipziger Cytomics Workshop, Leipzig, Germany (March, 2012)
- "High speed single cell spectroscopy: Integrating fluorescence and Raman scattering in cytometry" FACSS/SciX Symposium, Kansas City, MO (October, 2012)

"Multiplexed Approaches to Infectious Disease Monitoring, Keynote Address, The Cytometry Society, India 5th Annual Meeting, Kolkata (October, 2012)

"Spectral Flow Cytometry" The 13th Annual Indo-US Workshop on Advanced Flow Cytometry Techniques, Kolkata (October, 2012)

"The Single Cell Spectrometer" San Diego Society for Cytometry, San Diego (November, 2012)

"Single Cell Spectroscopy" CellTech 2013, San Diego (January, 2013)

Platform Presentations

"Multiparameter Measurement of Sperm Cell Function." Reproductive Biology Workshop. International Society for Analytical Cytology Annual Meeting, Colorado Springs, CO (March 1993)

"Regulation of Transbilayer Lipid Distribution in Bull Sperm." Society for the Study of Reproduction Annual Meeting, Fort Collins, CO (July 1993)

"Development of a Rapid Kinetic Flow Cytometer." Rocky Mountain Cytometry Conference, Angel Fire, NM (June 1994)

"Kinetic Analysis of Human Flap Endonuclease-1 by Flow Cytometry" International Society for Analytical Cytology XVIII Congress, Rimini, Italy (April 1996)

"Real-Time Kinetic Analysis of Nuclease-DNA Binding and Cleavage" Biophysical Society Annual Meeting, New Orleans, LA (March 1997)

"Real-Time Analysis of Molecular Assembly Using Kinetic Flow Cytometry" Advances in Optical Biophysics, SPIE-The International Society for Optical Engineering Photonics West Conference, San Jose, CA (January, 1998)

"Green Fluorescent Protein Standard Particles for Flow Cytometry and Fluorescence Microscopy" International Society for Analytical Cytology XIX Congress, Colorado Springs, CO (March 1998)

"Nucleic Acid and SNP Detection Using Flow Cytometry: A New Platform for High Throughput Genomic Analysis" LabAutomation'99, San Diego, CA (February, 1999)

"Multiplexed SNP Scoring Using Soluble Microsphere Arrays" LabAutomation2001, Palm Springs, CA (January 2001)

"Molecular Microbiology" International Society for Analytical Cytology XXI Congress, San Diego, CA (May 2002)

"Pharmacogenetics" International Society for Analytical Cytology XXI Congress, San Diego, CA (May 2002)

"Analysis of Sub-micron Biological Particles by High Sensitivity Flow Cytometry" International Society for Analytical Cytology XXII Congress, Montpellier, France (May 2004)

"Influenza Typing by Flow Cytometry" Clinical Cytometry Society Annual Meeting, Long Beach, CA (October 2004)

"High Throughput Molecular Analysis Using Microsphere Arrays" 5th Samuel A. Latt Conference, Goldcoast, Queensland, Australia (November, 2005)

"Raman Flow Cytometry" International Society for Analytical Cytology XXIII Congress, Quebec City, Canada (May 2006)

"A Flow Cytometer for the Measurement of Raman Spectra" International Society for the Advancement of Cytometry XXIV Congress, Budapest, Hungary (May 2008)

"Multiparameter Measurements using Raman Flow Cytometry" International Society for the Advancement of Cytometry XXIV Congress, Budapest, Hungary (May 2008)

"Single particle Raman spectroscopy in flow: Making the most of the spectrum for multiparameter analysis" Microscopy and Microanalysis, Albuquerque NM (August 2008)

“Standardization of flow cytometry measurement, analysis, and reporting: Considerations for quantification of cell-derived membrane vesicles” International Society of Thrombosis and Hemostasis, Scientific and Standardization Committee, Vascular Biology Sub-committee, Boston MA (July 2009)

“Flow spectroscopy for high throughput single nanoparticle analysis” SPIE Optics + Photonics, San Diego, CA (August 2009)

“Multiparameter Cell Analysis using Raman Flow Cytometry” CYTO 2011, Baltimore, MD (May, 2011)

“Strain-specific Human Antibody Responses to Influenza Virus” CYTO 2011, Baltimore, MD (May, 2011)

“Surface Enhanced Raman Scattering (SERS) Cytometry for Multiparameter Cell Analysis” SLAS 2012, San Diego, CA (February, 2012)

“Simultaneous Fluorescence and Raman Measurements by Hyperspectral Flow Cytometry” CYTO 2012, Leipzig, Germany (June, 2012)

“Nanoparticle Flow Cytometry of Natural and Synthetic Membrane Vesicles” CYTO 2012, Leipzig, Germany (June, 2012)

“Challenges and Opportunities for Multiparameter Analysis of Cell-derived Membrane Vesicles” International Society of Thrombosis and Hemostasis, Scientific and Standardization Committee, Vascular Biology Sub-committee, Liverpool UK (June 2012)

Meeting, Workshop, and Tutorial Organization

Session Chair, Advances in Optical Biophysics, SPIE-The International Society for Optical Engineering, Photonics West, San Jose, CA (January 1998).

Workshop on Bead-Based Flow Cytometric Analyses, International Society for Analytical Cytology XIX Congress, Colorado Springs, CO (March 1998).

Workshop on Microsphere-Based Analyses, International Society for Analytical Cytology XX Congress, Montpellier, France (May 2000).

Organizer, Session Chair, Genomics-SNP Technology Session, LabAutomation2001, Palm Springs, CA (January 2001)

Organizer, Session Chair, Genomics-SNP Technology Session, LabAutomation2002, Palm Springs, CA (January 2002)

Tutorial on Microsphere-Based Genetic Analysis, International Society for Analytical Cytology XXI Congress, San Diego, CA (May 2002)

Workshop on Microsphere-based Analysis, International Society for Analytical Cytology XXI Congress, San Diego, CA (May 2002)

Session Chair, Microbiology Parallel Session, International Society for Analytical Cytology XXI Congress, San Diego, CA (May 2002)

Organizer, Session Chair, Advanced Technology-Genomics Session, LabAutomation2003, Palm Springs, CA (February, 2003)

Organizer, Annual Course in Flow Cytometry, Los Alamos National Laboratory (June, 2003)

Session Chair, Flow in the Fast Lane Parallel Session, International Society for Analytical Cytology XXII Congress, Montpellier, France (May 2004)

Tutorial, Microsphere-Based Molecular Analysis, International Society for Analytical Cytology XXII Congress, Montpellier, France (May 2004)

Workshop, Multiplexed and Macromolecular Analysis, International Society for Analytical Cytology XXII Congress, Montpellier, France (May 2004)

Session Organizer/Chair, Flow Spectroscopy, Cytometry Development Workshop, Asilomar CA (October 2005)

Program Committee, Session Chair, Stem Cells in the Age of Fluorescence Technology 5th Samuel A. Latt Conference, Goldcoast, Queensland, Australia (November, 2005)

Program Committee, International Society for Analytical Cytology XXIII Congress, Quebec City, Canada (May, 2006)

Workshop Organizer, Chair, International Society for Analytical Cytology XXIII Congress, Quebec City, Canada (May, 2006)

Parallel Session Organizer, Chair, International Society for Analytical Cytology XXIII Congress, Quebec City, Canada (May, 2006)

Session Organizer/Chair, Flow Spectroscopy, Cytometry Development Workshop, Asilomar CA (October 2007)

Organizing Committee, International Society for Analytical Cytology XXIV Congress, Budapest, Hungary (May, 2008)

Workshop Organizer, Chair, International Society for Analytical Cytology XXIV Congress, Budapest, Hungary (May, 2008)

Session Organizer/Chair, Raman Cytometry, Cytometry Development Workshop, Asilomar CA (October 2008)

Session Organizer/Chair, Cytometry Technology Cytometry Development Workshop, Asilomar CA (October 2008)

Organizing Committee, CYTO 2010, International Society for Advancement of Cytometry Congress, Seattle, WA (2010)

Session Organizer/Chair, Cytometry Technology, Cytometry Development Workshop, Asilomar CA (October 2010)

Organizing Committee, CYTO 2011, International Society for Advancement of Cytometry Congress, Baltimore, MD (May, 2011)

Session Organizer/Chair, Cytometry Technology, Cytometry Development Workshop, Asilomar CA (October 2011)

Program Chair, CYTO 2012, International Society for Advancement of Cytometry Congress, Leipzig, Germany (May, 2012)

Session Organizer/Chair, Cytometry Technology, Cytometry Development Workshop, Asilomar CA (October 2012)

Organizing Committee, CYTO 2013, International Society for Advancement of Cytometry Congress, San Diego, CA (May, 2013)

Patents and Applications

1. **Nolan JP**, White PS, Cai H (2001) DNA polymorphism identity determination using flow cytometry. USPTO# 6,287,766.
2. **Nolan JP**, Nolan RL, Ruscetti T, Lehnert BE (2002) Recombinant fluorescent protein microsphere calibration standard. USPTO# 6,326,157.
3. **Nolan JP**, White SW (2006) DNA polymorphism identity determination using multiplexed oligonucleotide PCR. USPTO# 7,153,656
4. **Nolan JP**, Zhou F (2007) Early leukemia diagnostics using microsphere arrays. USPTO# 7,179,598
5. Kraus RH, Zhou F, **Nolan JP** (2007) Bioassay and biomolecular identification, sorting, and collection methods using magnetic microspheres. USPTO# 7,232,691
6. Kraus RH, Zhou F, **Nolan JP** (2003) Apparatus used in identification, sorting and collection methods using magnetic microspheres and magnetic microspheres kits. 20030186465

7. Sebba DS, **Nolan JP** (2009) Raman scattering tags for biological sensing (provisional).

Publications

1. Hammerstedt, R.H., J.K. Graham **J.P. Nolan** (1990) Cryopreservation of mammalian sperm: what we ask them to survive. *Journal of Andrology* 11: 73-88.
2. Graham, J.K., **J.P. Nolan**, R.H. Hammerstedt (1991) Effect of dilauroyl-phosphatidylcholine liposomes on motility, induction of the acrosome reaction, and subsequent egg penetration by epididymal ram sperm. *Biology of Reproduction* 44: 1092-1099.
3. **Nolan, J.P.**, J.K. Graham, R.H. Hammerstedt (1992) Artificial induction of exocytosis in bull sperm. *Archives of Biochemistry and Biophysics* 292: 311-322.
4. Andrews, J.C., **J.P. Nolan**, R.H. Hammerstedt, B.D. Bavister (1994) Role of zinc during hamster sperm capacitation. *Biology of Reproduction* 51: 1238-1247.
5. **Nolan, J.P.**, S.F. Magargee, R.G. Posner, R.H. Hammerstedt (1995) Flow cytometric analysis of transmembrane phospholipid movement in bull sperm. *Biochemistry* 34: 3907-3915.
6. Andrews, J.C., **J.P. Nolan**, R.H. Hammerstedt, B.D. Bavister (1995) Characterization of N-(6-methoxy-8-quinolyl)-p-toluenesulfonamide for the detection of zinc in hamster sperm. *Cytometry* 21:153-159.
7. **Nolan, J.P.**, R.G. Posner, R. Habbersett, J.C. Martin, L.A. Sklar (1995) A rapid mix flow cytometer with subsecond kinetic resolution. *Cytometry* 21:223-229.
8. Shen, B., **J.P. Nolan**, L.A. Sklar, M.S. Park (1996) Essential amino acids for substrate binding and catalysis of human flap endonuclease-1. *Journal of Biological Chemistry* 271:9173-9176.
9. **Nolan, J.P.**, Shen, B., M.S. Park, L.A. Sklar (1996) Kinetic analysis of human flap endonuclease-1 by flow cytometry. *Biochemistry* 35:11668-11676.
10. Robbins D.L., **J.P. Nolan**, J.H. Jett, L.A. Sklar, R.A. Keller (1997) Analysis of individual lipoproteins and liposomes. *Proceedings SPIE* 2985:213-222.
11. Roslaniec, M.C., C.S. Bell-Prince, H.A. Crissman, J.J. Fawcett, P.M. Goodwin, R. Habbersett, J.H. Jett, R.A. Keller, J.C. Martin, B.L. Marrone, **J.P. Nolan**, M.S. Park, B.L. Sailer, L.A. Sklar, J.A. Steinkamp, L.S. Cram (1997) New flow cytometric technologies for the 21st century. *Human Cell* 10:3-10.
12. **Nolan, J.P.**, R.H. Hammerstedt (1997) Regulation of membrane stability and the acrosome reaction in mammalian sperm. *FASEB Journal* 11:670-682.
13. Shen B., **J.P. Nolan**, L.A. Sklar, M.S. Park (1997) Functional analysis of point mutations in human flap endonuclease-1 active site. *Nucleic Acids Research* 25:3332-3338.
14. **Nolan, J.P.** H. Cai, K. Kommander, B. Lehnert, R. Nolan, M. Park, T. Ruscetti, B. Shen, L.A. Sklar (1998) Real-Time Analysis of Molecular Assembly by Kinetic Flow Cytometry. In *Advances in Optical Biophysics*. (Eds. J.R. Lakowicz and J.B.A. Ross) *Proceedings SPIE* 3256:114-121.
15. Cai H., K. Kommander, P.S. White, R. Keller, **J.P. Nolan** (1998) Flow Cytometry-Based Hybridization and Polymorphism Detection and Analysis. In, *Advances in Optical Biophysics* (Eds. J.R. Lakowicz and J.B.A. Ross) *Proceedings SPIE* 3256:171-177.
16. Sklar L.A., L.C. Seamer, F. Kuckuck, R.G. Posner, E. Prossnitz, B. Edwards, **J.P. Nolan** (1998) Sample handling for molecular assembly in flow cytometry. In, *Advances in Optical Biophysics* (Eds. J.R. Lakowicz

and J.B.A. Ross) Proceedings SPIE 3256:144-153.

17. **Nolan, J.P.**, L.A. Sklar (1998) The emergence of flow cytometry for sensitive, real-time measurements of molecular interactions. *Nature Biotechnology* 16:633-638.
18. Gudi S.R.P., **J.P. Nolan**, J.A. Frangos (1998) Modulation of GTPase activity of G proteins by fluid shear stress and phospholipid composition. *Proceedings of the National Academy of Sciences* 95: 2515-2519.
19. Song, X., **J.P. Nolan**, B Swanson (1998) Optical signal transduction triggered by protein-ligand binding: Detection of toxins using multivalent receptors. *Journal of the American Chemical Society* 120:4873-4874.
20. Song, X., **J.P. Nolan**, B. Swanson (1998) An optical biosensor based on fluorescence self-quenching and energy transfer: Ultrasensitive and specific detection of protein toxins. *Journal of the American Chemical Society* 120:11514-11515.
21. **Nolan, J.P.**, J.D. Chambers, L.A. Sklar (1998) Cytometric approaches to the study of receptors. In, *Cytometric Cellular Analysis, Vol. 1. Phagocyte Function: A Guide for Research and Clinical Evaluation* (Eds. J.P. Robinson and G. Babcock), pp 19-46. John Wiley and Sons, New York.
22. Frank, G, J. Qui, M. Somsouk, Y. Weng, L. Somsouk, **J.P. Nolan**, B. Shen (1998) Partial functional deficiency of E160D flap endonuclease-1 mutant in vitro and in vivo is due to defective cleavage of DNA substrates. *Journal of Biological Chemistry* 273:33064-33072.
23. Buranda, T., G. Jones, **J.P. Nolan**, J. Keij, G.P. Lopez, L.A. Sklar (1999) Ligand-receptor dynamics at streptavidin coated particle surfaces: a flow cytometric and spectrofluorometric study. *Journal of Physical Chemistry B* 103:3399-3410.
24. Ambrose, W.P., P.M. Goodwin, **J.P. Nolan** (1999) Single molecule detection with total internal reflection excitation: comparing signal to background and total signal in different geometries. *Cytometry* 36:224-231.
25. Gary, R., M.S. Park, **J.P. Nolan**, H.L. Cornelius, O.G. Korzyreva, H.P. Tran, K.S. Lobachev, M.A. Resnick, D.A. Gordenin (1999) A novel role in DNA metabolism for binding of Fen1/Rad27 to PCNA-and implications for genetic risk. *Molecular and Cell Biology* 19:5373-5382.
26. **Nolan, J.P.**, S. Lauer, E.R. Prossnitz, L.A. Sklar (1999) Flow cytometry: a versatile tool for all stages of drug discovery. *Drug Discovery Today* 4:173-180.
27. Cai, H., P.S. White, D.C. Torney, A. Deshpande, Z. Wang, R.A. Keller, B. Marrone, **J.P. Nolan** (2000) Flow cytometry based minisequencing: a new platform for high throughput single nucleotide polymorphism analysis. *Genomics* 66:135-143.
28. Yan, X, R.C. Habbersett, J.M. Cordek, **J.P. Nolan**, T.M. Yoshida, J.H. Jett, B.L. Marrone (2000) Development of a mechanism-based, DNA staining protocol using SYTOX Orange nucleic acid stain and DNA fragment sizing flow cytometry. *Analytical Biochemistry* 286, 138–148.g
29. Graves, S.W., R.C. Habbersett, **J.P. Nolan** (2001) A dynamic inline sample thermoregulation unit for flow cytometry. *Cytometry* 43:23-30.
30. **Nolan J.P.**, Mandy F. (2001) Suspension array technology: New tools for gene and protein analysis. *Cellular and Molecular Biology* 47:1241-1256.
31. Song, X., J. Shi, **J.P. Nolan**, B. Swanson (2001) Detection of multivalent interactions through two-tiered energy transfer. *Analytical Biochemistry* 291:133-141.
32. Jett, J.H, H. Cai, R.C. Habbersett, R.A. Keller, E.J. Larson, B.L. Marrone, **J.P. Nolan**, X. Song, B.

Swanson, P.S. White (2001) Flow cytometry analysis techniques for high-throughput biodefense research. In: *Firepower in the Lab: Automation in the Fight Against Infectious Diseases and Bioterrorism*. (Layne SP, Beugelsdijk TJ, Patel CKN, eds). Washington, DC: Joseph Henry Press, 193 - 201.

33. **Nolan, J.P.**, P.S. White, H. Cai (2002) SNP scoring for drug discovery applications. In, *Integrated Drug Discovery Technologies* (H.-Y. Mei and A. Czarnik, eds), pp 149-166, Marcel Dekker, New York.
34. Graves, S.W., **J.P. Nolan**, J.H. Jett, J.C. Martin, L.A. Sklar (2002) Effects of nozzle design on rapid delivery in flow cytometry. *Cytometry* 47:127-137.
35. **Nolan, J.P.**, L.A. Sklar (2002) Suspension array technology: Evolution of the flat array paradigm. *Trends in Biotechnology* 20:9-12.
36. Lauer, S., B. Goldstein, R. Nolan, **J.P. Nolan** (2002) Analysis of cholera toxin-ganglioside interactions by flow cytometry. *Biochemistry* 41:1742-1751.
37. Sklar, L.A., B. Edwards, S.W. Graves, **J.P. Nolan**, E. Prossnitz (2002) Flow cytometric analysis of ligand-receptor interactions and molecular assemblies. *Annual Review of Biophysics and Biomolecular Structure* 31:97-119.
38. Graves, S.W., R.C. Habbersett, **J.P. Nolan** (2002) Dynamic temperature control of the sample in flow cytometry. *Current Protocols in Cytometry* 1.18 (J.P. Robinson, editor), John Wiley and Sons.
39. Lauer, S., **J.P. Nolan** (2002) Development and characterization of Ni-NTA microspheres. *Cytometry* 48:136-145.
40. Green, L.D. , H. Cai, D.C. Torney, D.J. Wood, F.J. Uribe-Romeo, L. Kaderali, **J.P. Nolan**, P.S. White (2002) High-throughput SNP Scoring with GAMMAArrays: Genomic Analysis using Multiplexed Microsphere Arrays. In *Biomedical Nanotechnology Architectures and Applications* (Eds. D. J. Bornhop; D.A. Dunn; R.P. Mariella; C. J. Murphy; D. V. Nicolau; S. Nie; M. Palmer; R. Raghavachari) *Proc. SPIE Vol. 4626*, p. 308-315.
41. Kaderali, L., A. Deshpande, **J.P. Nolan**, P.S. White (2003) Primer design for multiplexed genotyping. *Nucleic Acids Research* 31: 1796-1802.
42. Kraus, R.H., M.A. Espy, A.N. Matlachov, T.J. Matsson, C. Carr, J.C. Martin, **J.P. Nolan**, S. Graves, A.C. Bergstrom, M.D. Ward, P. Grodzinski (2003) Bioassay with magnetic particles in flow: a method for highly parallel molecular separations of complex biological systems. *EUCAS 2003 Proceedings*.
43. Nolan, R.L., H. Cai, J.P. **Nolan, J.P.**, PM Goodwin (2003) A simple quenching method for fluorescence background reduction and its application to the direct, quantitative detection of specific mRNA. *Analytical Chemistry* 75: 6236-6243.
44. Cleland C.A., P.S. White, A. Deshpande, M. Wolinsky, J. Song, **J.P. Nolan** (2004) Rational design of nucleic acid signatures for the detection, identification, and characterization of microbial pathogens. *Expert Reviews in Molecular Diagnostics* 4: 89-101.
45. Yan, X., E.G. Schielke, K.M. Grace, C. Hassell, B.L. Marrone, **J.P. Nolan** (2004) Microsphere-based duplexed immunoassay for influenza virus typing by flow cytometry. *Journal of Immunological Methods* 284:27-38.
46. Gerena, Y., **J.P. Nolan**, L. Wang, A. Schwartz, E. Fernandez-Repollet (2004) Quantification of EGFP expression on Molt-4 cells using calibration standards. *Cytometry* 60B:21-28.
47. Deshpande, A., **J.P. Nolan**[†], P.S. White, Y.E. Valdez, C.L. Peyton, W.C. Hunt, C.M. Wheeler (2005) TNF

alpha promoter polymorphisms and susceptibility to HPV16-associated cervical cancer. *Journal of Infectious Disease* 191:969-976. †Corresponding author.

48. Graves S.W., T.A. Woods, **J.P. Nolan** (2005) Microsphere surface protein concentration determination using ATTO-Tag CBQCA. *Cytometry* 65A: 50-58.
49. Yan, X., R.C. Habbersett, **J.P. Nolan**, T.M. Yoshida, J.H. Jett, B.L. Marrone (2005) Probing the kinetics of SYTOX Orange and PicoGreen stains binding to double-stranded DNA with implications for DNA analysis. *Analytical Chemistry* 77:3554-3562.
50. Gramaglia I., H. Sahlin, **J.P. Nolan**, J. A. Frangos, M. Intaglietta, H. C. van der Heyde (2005) Cell- rather than antibody-mediated immunity leads to the development of profound thrombocytopenia during experimental *Plasmodium berghei* malaria. *Journal of Immunology* 175: 7699-7707.
51. Woods, T.A., S.W. Graves, **J.P. Nolan** (2005) Protein surface concentration measurements using flow cytometry. *Current Protocols in Cytometry* 13.2.
52. Deshpande, A., Y.E. Valdez, **J.P. Nolan** (2005) SNP genotyping using single base extension and flow cytometry. *Current Protocols in Cytometry* 13.4.
53. **Nolan J.P.**, A. Deshpande, F. Zhou (2005) Genetic Analysis Using Microsphere Arrays. In *Flow Cytometry for Biotechnology* (LA Sklar, ed) Oxford University Press.
54. Graves, S.W., **J.P. Nolan**, L.A. Sklar (2005) Molecular assembly analysis using flow cytometry. In *Flow Cytometry for Biotechnology* (LA Sklar, ed) Oxford University Press.
55. Yan X., W. Zhong, A. Tang, E.G. Schielke, W. Hang, **J.P. Nolan** (2005) Multiplexed flow cytometric immunoassay for influenza virus detection and differentiation. *Analytical Chemistry* 77: 7673-7678.
56. **Nolan, J.P.**, Mandy F. (2006) Multiplexed and microparticle-based analyses: Quantitative tools for the large-scale analysis of biological systems. *Cytometry* 69A:318-325.
57. Saunders, M. J., H. Kim H, T. A. Woods, **J.P. Nolan**, L. A. Sklar, B. S. Edwards, S. W. Graves (2006) Microsphere-based protease assays and screening application for lethal factor and factor Xa. *Cytometry* 69A:342-352.
58. **Nolan, J.P.**, L. Yang, H.C. van der Heyde (2006) Reagents and instruments and for multiplexed analysis using microparticles. *Current Protocols in Cytometry* 13.8.
59. Goddard, G., J. C. Martin, M. Naivar, P. M. Goodwin, S. W. Graves, R.C. Habbersett, **J.P. Nolan**, J. H. Jett (2006) Spectral analysis flow cytometer: Modular inclusion of high resolution spectral analysis. *Cytometry* 69A: 842-851.
60. **Nolan, J.P.** (2006) Molecular analysis using microparticle-based flow cytometry. *Reviews in Fluorescence* 2006, pp 195-212.
61. van der Heyde, H.C., **J.P. Nolan**, V. Combes, I. Gramaglia, and G.E. Grau (2006) A unified hypothesis for the genesis of cerebral malaria: sequestration, inflammation, plus hemostasis leading to microcirculatory dysfunction. *Trends in Parasitology* 22:503-508.
62. Gramaglia I., P. Sobelevski, D. Maeys, R. Contreras, **J.P. Nolan**, J. A. Frangos, M. Intaglietta, H. C. van der Heyde (2006) Low nitric oxide bioavailability contributes to the genesis of experimental cerebral malaria. *Nature Medicine* 12: 1417-1422.
63. van der Heyde, H.C., W.P. Weidanz, J.M. Burns, I. Gramaglia, **J.P. Nolan** (2007) Analysis of antigen-

specific antibodies and their isotypes in experimental malaria. *Cytometry A* 71A:242-250.

64. Yang, L., and **J.P. Nolan** (2007) High throughput screening and characterization of phage display libraries using microsphere arrays. *Cytometry* 71A: 625-631.
65. **Nolan, J.P.** and L. Yang (2007) The flow of cytometry into systems biology. *Briefings in Functional Genomics and Proteomics* 6: 81-90.
66. Naivar, M.A., J.D. Parson, M.E. Wilder, R.C. Habbersett, B.S. Edwards, S.W. Graves, **J.P. Nolan**, J.C. Martin, J.H. Jett, J.J. Trujillo, T.A. Woods, C.K. Sanders, J.P. Freyer (2007) Open, reconfigurable cytometric acquisition system: ORCAS. *Cytometry* 71A:915-924.
67. Deshpande, A., C.M. Wheeler, W.C. Hunt, C.L. Peyton, P.S. White, Y.E. Valdez and **J.P. Nolan** (2008) Variation in HLA Class I antigen processing genes and susceptibility to HPV16-associated cervical cancer. *Journal of Infectious Disease* 197:371-381.
68. Watson, D.A., D.F. Gaskill, L.O. Brown, M.A. Naivar, S.W. Graves, S.K. Doorn, and **J.P. Nolan** (2008) A flow cytometer for the measurement of Raman spectra. *Cytometry* 73A:119-128.
69. Chen, J., J. Zhou, W. Bae, C.K. Sanders, **J.P. Nolan** and H. Cai (2008) A yEGFP-based reporter system for high throughput flow cytometric yeast two-hybrid screening. *Cytometry* 73A:312-320.
70. Szöllosi J, **Nolan J**, Tárnok A. (2008) New trends in cytometry in the era of systems biology. *Cytometry A*.73:267-9
71. Lee, J.A., J. Spidlen, S. Atwater, K. Boyce, J. Cai, N. Crosbie, M. Dalphin, J. Furlong, M. Gasparetto, M. Goldberg, B. Hyun, K. Jansen, T. Kollmann, M. Kong, D. Lary, R. Leif, S. McWeeney, T.D. Moloshok, W. Moore, G. Nolan, **J.P. Nolan**, J. Nikolich-Zugich, D. Parrish, J. Price, B. Purcell, Y. Qian, B. Selvaraj, M. Simmerson, C. Smith, O. Tchuvatkina, P. Wilkinson, A. Wertheimer, C. Wilson, R.H. Scheuermann, and R. R. Brinkman (2008) MIFlowCyt: The Minimum Information about a Flow Cytometry Experiment. *Cytometry A* 73: 926-30.
72. Watson, D.A., D.F. Gaskill, L.O. Brown, S.K. Doorn, **J.P. Nolan** (2009) Spectral measurements of large particles by flow cytometry. *Cytometry* 75:460-4.
73. Chen, J., J. Zhou, C.K. Sanders, **J.P. Nolan** and H. Cai (2009) A surface display yeast two hybrid screening system for high throughput protein interactome mapping. *Analytical Biochemistry* 390:29-37.
74. Sebba, D.S., D.A. Watson, **J.P. Nolan** (2009) High throughput single nanoparticle spectroscopy. *ACS Nano* 3:1477-1484.
75. Naivar M., M.E. Wilder, R.C. Habbersett, D.S. Sebba, **J.P. Nolan**, S.W. Graves (2009) Development of small and inexpensive digital data acquisition systems using a microcontroller based approach. *Cytometry* 75:979-89.
76. **Nolan, J.P.**, DS Sebba (2011) Surface Enhanced Raman Scattering (SERS) Cytometry. *Methods in Cell Biology* 102: 515-532.
77. Liu, E. and **J.P. Nolan** (2012) Light emitting diodes (LEDs): light engines to simplify and economize advanced microscopy. *Cytometry* 81A: 185-187.
78. **Nolan, J.P.**, E. Duggan, E Liu, D. Condello, I. Dave, S.A. Stoner (2012) Single cell analysis using surface enhanced Raman scattering (SERS) tags. *Methods* 57:272-9.
79. Shapiro, H.M., **J.P. Nolan**, A. Tarnok (2012) Cytometry 2012: What would Ehrlich do? *Cytometry* 81A:437-

438.

80. Hoffman, R.A., L. Wang, M. Bigos, **J.P. Nolan** (2012) NIST/ISAC standardization study: Variability in assignment of intensity values to fluorescence standard beads and in cross calibration of standard beads to hard dyed beads. *Cytometry* 81:785-96.
81. Cossarizza, A., **J.P. Nolan**, A. Radbruch, A. Tarnok (2012) Advancing cytometry for immunology. *European Journal of Immunology* 42:3106-9.
82. **Nolan, J.P.**, D. Condello, E. Duggan, M. Naivar, D. Novo (2013) Visible and Near Infrared Fluorescence Spectral Flow Cytometry. *Cytometry* 83A: 253-264.
83. **Nolan, J.P.** and D. Condello (2013) Spectral flow cytometry. *Current Protocols in Cytometry* 1.27.1-1.27.13.
84. **Nolan, J.P.**, S.A. Stoner (2013) A Trigger Channel Threshold Artifact in Nanoparticle Analysis. *Cytometry* 83A: 301-305.