Sandra J. Canosa, MS, CCRP

215 Lauder Hall, 310 Cedar St., New Haven, CT. (203) 737-5864

sandra.canosa@yale.edu

Professional Experience:

Program Manager

Yale Pathology Labs, Clinical Molecular Pathology A molecular characterization laboratory for biomarker identification in support of NCI-MATCH and other clinical trials through ETCTN Responsible for clinical trial quality management and regulatory compliance within laboratory, including maintenance of regulatory binder and all components therein for each trial supported such as SOP's, deviation reports, adverse event reports, and critical reagent accountability Data analyst reviewing all data produced by NGS pipelines for variant call accuracy Coordinate the development and validation of NGS assays to identify biomarkers of interest to trials, and of bioinformatic tools for NGS data analysis and reporting within those trials Provide NGS services on Ion Torrent platforms for internal and external research collaborators Systems support for genomics instrumentation

Applied Genomics Specialist, Research Associate II

Yale Pathology Labs, Molecular Diagnostics Development Evaluated NGS based assays for clinical feasibility and translated Ion Torrent's Technologies to the clinical laboratory, achieving national recognition for expertise. Successfully competed for inclusion in the NCI-MATCH consortium. Delivered global AAAS Science Technology Webinar on Bioinformatics. Assay development including FISH, CGH, miRNA profiling. Bioinformatics support for Molecular Diagnostics Laboratories Systems support for genomics instrumentation such as Ion Torrent PGM, Ion Torrent OneTouch, Life Technologies Viia7, Agilent SureScan

Laboratory Manager, Research Associate II

Yale University Medical School, Department of Pathology Genomics-based approaches to dissecting neuro-vascular developmental pathways impacted by hypoxic insult Elucidation of signaling pathways influenced by Platelet Endothelial Cell Adhesion Molecule-1 polymorphisms SNP association studies of osteoporosis and neurodevelopmental handicaps. Assay development and execution Train and supervise researchers, ensure compliance with laboratory practices, procedures, and regulations, equipment and lab maintenance, procurement, inventory accounting, maintenance of laboratory records

Research Associate I

Yale University Medical School, Department of Pathology Regulation of matrix metalloproteinases by Platelet Endothelial Cell Adhesion Molecule-1

Research Assistant III

Yale University Medical School, Department of Pathology Impact of VCAM:VLA4 engagement on regulation of matrix metalloproteinase-2 in M.S.

1995-97

1997-03

2012-13

2003-11

2014-

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Research Technician I, Laboratory Manager Howard Hughes Medical Institute Yale University Medical School, Department of Immuno-biology NF-kB pathways in B-cell development	1993-95
Research Assistant II Yale University Medical School, Department of Internal Medicine Evaluation of synergistic anti-neoplastic activity of DDATHF and 5-FU against colon 38 tumor cells.	1990-91
Information Systems Specialist Coalesce Corporation, Saratoga, CA Database management and computer support, biotechnology marketing	1991-92
Research Assistant UCSC Institute of Marine Sciences, Long Marine Laboratory, Santa Cruz, CA Bioenergetics research involving California Sea Lions Animal husbandry and training of marine mammals in support of research projects Assist research into relationship between day length and reproduction in polychaetes Relief care-taker for facility	1988-90
Research Assistant Pacific Mariculture, Inc. Davenport, CA Care of abalone stock and facilities maintenance in pilot-phase of abalone mariculture company	1986-88
Volunteer Experience: Executive Board Member Yale Healthcare and Life Sciences Club Program Coordinator, Yale Technology Ventures Program (YTVP) Form multidisciplinary teams customized to effectively perform pro-bono consulting services to local biotechnology companies Create marketing materials in support of student recruitment to the program Participant, Yale Technology Ventures Program Perform pro-bono consulting services to a local biotechnology company as a member of a multidisciplinary team of business, science, and public health students Editor-in-Chief, TechImpact@Yale An annual publication of the Yale Technology Ventures Program	2010-11
Education: Master of Science, Applied Genomics, Molecular and Cellular Biology	2010
University of Connecticut Professional Science Masters program Bachelor of Arts, Majoring in Biology University of California at Santa Cruz (UCSC)	1990
Certifications:	

Certified Clinical Research Professional (CCRP)	2016
The Society of Clinical Research Associates, Inc.	

Presentations:

"The Importance of Bioinformatics in NGS: Breaking the Bottleneck in Data Interpretation" Science Magazine, Science Technology Webinar Series, May 14, 2014

Publications:

Li Q, Michaud M, Shankar R, Canosa S, Schwartz M, Madri JA.

MMP-2: A modulator of neuronal precursor activity and cognitive and motor behaviors. Behav Brain Res. 2017 Aug 30;333:74-82. doi: 10.1016/j.bbr.2017.06.041. Epub 2017 Jun 27 Lih CJ, Harrington RD, Sims DJ, Harper KN, Bouk CH, Datta V, Yau J, Singh RR, Routbort MJ, Luthra R, Patel KP, Mantha GS, Krishnamurthy S, Ronski K, Walther Z, Finberg KE, Canosa S, Robinson H, Raymond A, Le LP, McShane LM, Polley EC, Conley BA, Doroshow JH, Iafrate AJ, Sklar JL, Hamilton SR, Williams PM. Analytical Validation of the Next-Generation Sequencing Assay for a Nationwide Signal-Finding Clinical Trial: Molecular Analysis for Therapy Choice Clinical Trial. J Mol Diagn. 2017 Mar;19(2):313-327. doi: 10.1016/j.jmoldx.2016.10.007. Epub 2017 Feb 7. Li Q, Canosa S, Flynn K, Michaud M, Krauthammer M, Madri JA. Modeling the neurovascular niche: unbiased transcriptome analysis of the murine subventricular zone in response to hypoxic insult. PLoS One. 2013 Oct 11;8(10) Flynn KM, Michaud M, Canosa S, Madri JA. CD44 regulates vascular endothelial barrier integrity via a PECAM-1 dependent mechanism. Angiogenesis. 2013 Jul:16(3):689-705. Li Q, Michaud M, Canosa S, Kuo A, Madri JA. GSK-3β: a signaling pathway node modulating neural stem cell and endothelial cell interactions. Angiogenesis. 2011 May;14(2):173-85. Biswas P. Canosa S. Schoenfeld D. Schoenfeld J. Li P. Cheas LC. Zhang J. Cordova A. Sumpio B. Madri JA. PECAM-1 affects GSK-3beta-mediated beta-catenin phosphorylation and degradation. Am J Pathol. 2006 Jul;169(1):314-24 Biswas P. Zhang J. Schoenfeld JD. Schoenfeld D. Gratzinger D. Canosa S. Madri JA. Identification of the regions of PECAM-1 involved in beta- and gamma-catenin associations. Biochem Biophys Res Commun. 2005 Apr 22:329(4):1225-33. Carrithers M. Tandon S. Canosa S. Michaud M. Graesser D. Madri JA. Enhanced susceptibility to endotoxic shock and impaired STAT3 signaling in CD31-deficient mice. Am J Pathol. 2005 Jan: 166(1): 185-196 Gratzinger D. Canosa S. Engelhardt B. Mardri JA. Platelet endothelial cell adhesion molecule-1 modulates endothelial cell motility through the small G-protein Rho. FASEB J. 2003 Aug;17(11):1458-69 Biswas P. Canosa S. Schoenfeld J. Schoenfeld D. Tucker A. Madri JA. PECAM-1 promotes beta-catenin accumulation and stimulates endothelial cell proliferation. Biochem Biophys Res Commun. 2003 Mar 28;303(1):212-8 Enciso JM. Gratzinger D. Camenisch TD. Canosa S. Pinter E. Madri JA. Elevated glucose inhibits VEGF-A-mediated endocardial cushion formation: modulation by PECAM-1 and MMP-2 J Cell Biol. 2003 Feb 17;160(4):605-15 Haas TL. Milkiewicz M. Davis SJ. Zhou AL. Egginton S. Brown MD. Madri JA. Hudlicka, O. Matrix Metalloproteinase activity is required for activity-induced angiogenesis in rat skeletal muscle. Am J Physiol. Heart Circ Physiol. 2000 Oct;279(4):H1540-7. Haas TL. Stitelman D. Davis SJ. Apte SS. Madri JA.

Egr1 mediates extracellular matrix-driven transcription of the matrix metalloproteinase MT1-MMP in endothelium.

J Biol Chem. 1999 Aug 6;274(32):22679-85

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Graesser D. Mahooti S. Haas T. Davis S . Clark RB. Madri JA.
The interrelationship of alpha4 integrin and matrix metalloproteinase-2 in the pathogenesis of
experimental autoimmune encephalomyelitis. Lab Invest. 78(11):1445-58, 1998 Nov.
Haas TL. <u>Davis SJ</u> . Madri JA.
Three-dimensional type I collagen lattices induce coordinate expression of matrix metalloproteinases
MT1-MMP and
MMP-2 in microvascular endothelial cells. J Biol Chem. 273(6):3604-10, 1998 Feb 6.
Lu TT. Barreuther M. Davis S . Madri JA.
Platelet endothelial cell adhesion molecule-1 is phosphorylatable by c-Src, binds Src-Src homology2
domain, and exhibits immunoreceptor tyrosine-based activation motif-like properties.
J Biol Chem . 272(22):14442-6, 1997 May 30.
Pizzorno G. <u>Davis SJ</u> . Hartigan DJ. Russello O.
Enhancement of antineoplastic activity of 5-fluorouracil in mice bearing colon 38 tumor by
(6R)5,10-dideazatetrahydrofolic acid. Biochem Pharmacol. 47(11):1981-8, 1994 Jun 1.
Davis SJ. Shell pigment polymorphism in the Blue Mussel, Mytilus edulis.
The Connecticut Journal of Science Education. 24(1):49-53, 1987.

Technical Skills:

- Molecular Biology: Next Generation Sequencing, Ion Torrent instrumentation, microarray, FISH, IHC, PCR, RealTime PCR, Nucleic acid extraction and purification, recombinant DNA, electrophoresis, Northern Blot, EMSA, cloning, expression vectors, Sanger sequencing.
- Protein Chemistry: SDS-PAGE, western blot, IEF, zymography, column chromatography, FACS, protein expression and purification.
- Animal Cell Culture: 2-and 3-dimensional culture, primary cell isolation, boyden chamber assay, immunostaining, transfection, nucleofection, viral transduction.
- Computer: Mac and PC platforms, Torrent Suite, Ion Reporter, Adobe Suite, Microsoft Office.