BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed for Form Page 2.
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NAME	POSITION TITLE
Diane C. Darland	Investigator

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
University of California at San Diego, La Jolla, CA	B.A.	1988	Biology
Oregon Health Sciences University, Portland, OR	Ph.D.	1998	Cell & Developmental Biology/Neurobiology
Children's Hospital, Boston, MA	Post-doc	1998	Vascular Biology
Schepens Eye Research Institute, Boston, MA	Post-doc	1998	Vascular Biology

A. Positions and Honors

Positions and Employment

1985-1987 Laboratory assistant (volunteer); Scripps Institute of Oceanography, La Jolla, CA
1985-1988 Laboratory assistant; Scripps Institute of Oceanography, La Jolla, CA
1988 Laboratory assistant (volunteer); *Melville* Research Vessel, Scripps Research Institute, La Jolla, CA
1988-1992 Research technician/Laboratory Manager, The Burnham Institute
1992-1998 Graduate student, Oregon Health Sciences University, Portland, OR
1998 Postdoctoral Research Fellow, Dept. of Surgery, Children's Hospital and Dept. of Pathology, Harvard Medical School, Boston, MA
1998-2001 Postdoctoral Research Fellow, Schepens Eye Research Institute and Dept. of Ophthalmology, Harvard Medical School, Boston, MA
2001-2005 Investigator, Schepens Eye Research Institute, Harvard Medical School, Boston, MA
2001-2005 Instructor, Harvard Medical School, Boston, MA
2005- Assistant Professor, Dept. of Biology, University of North Dakota, Grand Forks, ND

Other Experience and Professional Memberships

Honors

1983 Bausch & Lomb Scholarship
1983 Dr. Cloyd Memorial Scholarship
1985 Provost Honor List, University of California, San Diego
1992-1998 Recipient of Award for Research Training in Molecular Biology, Immunology & Ophthalmology, Oregon Health Sciences University
1996 Scholarship to attend Vision Course, Woods Hole, MA, sponsor: National Eye Institute
1999-2002 National Research Service Award, Postdoctoral Training, National Heart, Lung and Blood Institute
2001-2002 Investigator Training Award, Knights Templar Eye Foundation
2003-2004 Alice J. Adler Scholars in Medicine, Harvard Medical School
2003-2004 Massachussetts Eye and Ear Infirmary Joint Clinical Research Award

Professional Societies

1995-1997 Society for Neuroscience, Student Member
1993-1997 Association for Research in Vision and Ophthalmology, Student Member
1998- American Society for Cell Biology, Member
2000- North American Vascular Biology Organization, Member
2001- Society for Neuroscience, Member
2001- Association for Research in Vision and Ophthalmology, Member

B. Selected peer-reviewed publications

Engvall, E., Earwicker (Darland), D., Haaparanta, T., Ruoslahti, E., and Sanes, J.R. Distribution and isolation of four laminin variants: tissue restricted distribution of heterotrimers assembled from five subunits. *Cell Regulation,* 1:731-740 (1990).

Engvall, E., Earwicker (Darland), D., Day, A., Muir, D., Manthorpe, M., and Paulsson, M. Merosin promotes cell attachment and neurite outgrowth and is a component of the neurite-promoting factor of RN22 Schwannoma cells. *Experimental Cell Research* 198:115-123 (1992).

Darland, D., Link, B.A. and Nishi, R. Activin A and follistatin expression in developing targets of ciliary ganglion neurons suggest a role in regulating neurotransmitter phenotype. *Neuron* 15:857-866 (1995).

Darland, D.C. and Nishi, R. Activin A and follistatin affect expression of somatostatin in the ciliary ganglion in vivo. *Developmental Biology* 202:293-303 (1998).

Darland, D.C. and D'Amore, P.A. Blood vessel maturation: vascular development comes of age. *J Clinical Investigation* 103:157-158 (1999).

D'Amore, P.A., Ng, Y-S., and Darland, D.C. *Angiogenesis*. Science and Medicine, May/June (1999).

Darland, D.C. and D'Amore, P.A. Cell-cell interactions in vascular development. *Current Topics in Developmental Biology*, 52:107-149 (2001).

Darland, D.C. and D'Amore, P.A. Endothelial cells and pericytes in tumor vasculature. *Tumor Angiogenesis and Microcirculation*, Chapter 1:1-8 ed. EE Voest and PA D'Amore, Marcel Dekker, Inc., NY, NY (2001).

Darland, D.C. and D'Amore, P.A. TGFβ is required for the formation of capillary-like structures in three-dimensional cocultures of 10T1/2 and endothelial cells. *Angiogenesis* 4:11-20 (2001).

Hartnett, M.E., Lappas, A., Darland, D., McColm, J., Lovejoy, S. and D'Amore, P. Vascular endothelial cells reduce RPE barrier function via a soluble VEGF-dependent mechanism. *Experimental Eye Research*, 77:593-599 (2003).

Darland, D.C., Massingham, L.J., Smith, S.R., Piek, E., Saint-Geniez, M. and D'Amore, P.A. Pericyte production of cell-associated VEGF is differentiation-dependent and is associated with endothelial survival. *Developmental Biology*, 264:275-288 (2003).

Le Gat, L., Gogat, K., Saint-Geniez, M., Darland, D., Van Den Berghe, L., Bouquet, C., Marchant, D., Provost, A., Perricaudet, M., Menasche, M., and Abitbol, M. *In vivo* adenovirus-mediated delivery of a uPA/uPAR antagonist reduces retinal neovascularization in a mouse model of retinopathy. *Gene Therapy*, 10:2098-2103 (2003).

Garcia, C.M., Darland, D.C., Massingham, L.J., and D'Amore, P.A..Endothelial cell-astrocyte interactions and TGFß are required for induction of blood-neural-barrier properties. *Developmental Brain Research*, 152:25-38 (2004).

Ding, R., Darland, D.C., Parmacek, M.S., and D'Amore, P.A.. Endothelial-mesenchymal interactions *in vitro* reveal molecular mechanisms of smooth muscle/pericyte differentiation. *Stem Cells and Development*, 13:509-520 (2004).

Morris PN, Dunmore BJ, Tadros A, Marchuk DA, Darland DC, D'Amore PA & Brindle NPJ. Functional analysis of a mutant form of the receptor tyrosine kinase Tie2 causing venous malformations. *Journal of Molecular Medicine*, Jan;83(1):58-63 (2005).

Arboleda-Velasquez, J.F., Rampal, R., Fung, E., Darland, D.C, Liu, M., Martinez, M.C., Donahue, C.P., Navarro-Gonzalez, M.F., Libby, P., D'Amore, P.A., Aikawa, M., Haltiwanger, R.S., Kosik, K.S. CADASIL mutations impair Notch 3 glycosylation by Fringe. *Human Molecular Genetics*, 14(12): 1631-1639 (2005).

Levenberg, S., Rouwkema, J., Macdonald, M., Garfein, E.S., Kohane, D.S., Darland, D.C., Marini, R., van Blitterswijk, C.A., Mulligan, R.C., D'Amore, P.A., Langer, R. Engineering vascularized skeletal muscle tissue. *Nature Biotechnology*, 23(7):879-84 (2005).

C. Research Support

Ongoing Research Support

Glaucoma Foundation Grosskreutz, C. (PI) and Darland D.C. (co-PI) 01/01/05-12/31/05
The role of stromal cell-derived factor-1 (SDF-1) in glaucoma progression
Role: Co-Principal Investigator

Completed Research Support

Scholars in Medicine Darland, D.C. (PI) 09/01/03-08/31/04
Harvard Medical School, Boston, MA
Innervation effects on the vasculature of the choroid.
Role: Principal Investigator

Joint Clinical Research Award Darland, D.C. (PI) 08/01/03-07/31/04
Massachussetts Eye and Ear
The role of stromal cell-derived factor-1 (SDF-1) in glaucoma progression.
Role: Principal Investigator and Co-Investigator

Investigator Training Award Darland, D.C. (PI) 11/01/01-10/31/02
Knights Templar Eye Foundation
Vessel assembly in a 3-D culture model of retinopathy of prematurity (ROP): cell-cell interactions and the role of VEGF isoforms.
Role: Principal Investigator

National Research Service Award Darland, D.C. (PI); D'Amore, P.A. (mentor) 06/01/99-04/30/02
National Institutes of Health, National Institute of Heart, Lung and Blood
Smooth muscle cell differentiation *in vitro* and *in vivo.*
Role: Postdoctoral Trainee