

# CURRICULUM VITAE

## Beth L. Roman, PhD

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University of Pittsburgh Graduate School of Public Health  
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## EDUCATION AND TRAINING

### Undergraduate

1985-1989	The Pennsylvania State University, University Park, PA	BS with Highest Distinction, 1989	Biochemistry
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### Graduate

1991-1997	University of Wisconsin, Madison, WI	PhD, 1997	Dr. Richard Peterson Environmental Toxicology
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### Post-graduate

1997-2002	National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD	Postdoctoral Fellow	Dr. Brant Weinstein Developmental Genetics
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## APPOINTMENTS AND POSITIONS

2002-2006	Assistant Professor	Department of Cell Biology, Georgetown University Medical Center, Washington, DC
2006-2014	Assistant Professor	Department of Biological Sciences, University of Pittsburgh, Pittsburgh, PA
2014-2015	Visiting Assistant Professor	Department of Human Genetics, University of Pittsburgh Graduate School of Public Health, Pittsburgh, PA
2014-present	Member	Heart, Lung, Blood, and Vascular Medicine Institute, University of Pittsburgh School of Medicine, Pittsburgh, PA
2015-2016	Visiting Associate Professor	Department of Human Genetics, University of Pittsburgh Graduate School of Public Health, Pittsburgh, PA
2016-present	Associate Professor	Department of Human Genetics, University of Pittsburgh Graduate School of Public Health, Pittsburgh, PA (tenure conferred 2/1/2019).

## MEMBERSHIP IN PROFESSIONAL AND SCIENTIFIC SOCIETIES

1993-2003	Society of Toxicology
2001-2010	Society for Developmental Biology
2003-present	North American Vascular Biology Organization
2010-present	CureHHT (formerly HHT Foundation International)
2013-2014	American Heart Association
2017-present	AAAS

## HONORS

1985-1989	Braddock Scholar <i>academic award, covering tuition, room, and board</i> The Pennsylvania State University
1987-1989	Evan Pugh Scholar <i>top 0.5% of class</i> The Pennsylvania State University
1988	Phi Beta Kappa
1991-1992	Wisconsin Alumni Research Foundation Fellow University of Wisconsin-Madison
1993-1994	Zaman-Saroya Graduate Student Award for Excellence in Research and Scholarship School of Pharmacy, University of Wisconsin-Madison
1994-1997	Predoctoral Trainee National Institute of Environmental Health Sciences Training Grant Environmental Toxicology Center, University of Wisconsin-Madison
1997-2002	Intramural Research Training Award National Institute of Child Health and Human Development National Institutes of Health
1998	Best paper in the discipline of Reproductive and Developmental Toxicology to appear in <i>Toxicology and Applied Pharmacology</i> in 1998 Reproductive and Developmental Toxicology Specialty Section, Society of Toxicology
2002	Fellows Award for Research Excellence National Institutes of Health
2004	Mamie Doud Eisenhower Memorial Award American Heart Association, Women's Board of the Greater Washington Region

2019

James L. Craig Excellence in Teaching Award  
University of Pittsburgh Graduate School of Public Health

## PROFESSIONAL ACTIVITIES

### 1. PROFESSIONAL ACTIVITIES: TEACHING

1A. Courses Taught				
Years	Institution	Course	Hours, credits, enrollment	Role in course
2004-2005	GUMC	CBIO517 Microscopic Anatomy	5 hrs 300 students	Lecturer
2004-2006	GUMC	CBIO539 Molecular Cell Biology	14/36 hrs 4 credits 22 students	Course leader
2004-2006	GUMC	CBIO562 Molecular Cell Biology, in depth	6/14 hrs 2 credits 10 students	Course leader
2005	GUMC	CBIO518 Embryology	2 hrs 300 students	Lecturer
2007	Pitt/ENG	BIOENG3600 The Forces that Shape Organs	2 hrs 6 students	Lecturer
2007-2012	Pitt/A&S	BIOSC0190 Introduction to the Biological World	56/112 hrs 4 credits 20 students	Course co-leader
2007-2012	Pitt/A&S	BIOSC2023 Current Topics in MCDB	9/24 hrs 2 credits 10 students	Course leader (2009, 2010), lecturer
2009, 2012	Pitt/A&S	BIOSC2130 Genetic Analysis of Model Organisms	6 hrs 10 students	Lecturer
2010-2011	Pitt/MED	MSTP5010 Professional Development I	4 hrs 8 students	Lecturer
2012-present	Pitt/MED	MSCMP4750 Angiogenesis	4.5 hrs 2-10 students	Lecturer, co-course organizer
2014	Pitt/A&S	BIOSC0150 Introductory Biology	32/64 hrs 3 credits 292 students	Course co-leader

**1A. Courses Taught**

Years	Institution	Course	Hours, credits, enrollment	Role in course
2014	Pitt /GSPH	HUGEN2027 Human Genetics Journal Club	14 hrs 1 credit 24 students	Course co-leader
2015	Pitt /GSPH	HUGEN2027 Human Genetics Journal Club	14 hrs 1 credit 26 students	Course leader
2015-present	Pitt/GSPH	HUGEN2040 Molecular Basis of Human Inherited Disease	18/40.5 hrs 3 credits ~35 students	Course co-leader
2015-present (odd years)	Pitt/GSPH	HUGEN2051 Inborn Errors of Development	4 hrs 2 credits ~10 students	Lecturer
2017	Pitt/MED	ISB2030 Quantitative Imaging	4 hrs 8 students	Lecturer

**1B. Major Advisor for Graduate Student Essays, Theses, Dissertations**

Student	Degree /year	Document/Title	Current Position
Shih-Hui (Sherry) Hsieh	MS 2004 GUMC Cell Biology	GC-Unc45 in aortic arch development in zebrafish	Unknown
Matthew J. Anderson	PhD 2008 GUMC Tumor Biology	Investigation of the role of Unc45a in aortic arch development	Staff Scientist, NCI/NIH
Derek W. Laux	PhD 2013 Pitt Biological Sciences	ALK1 signaling in vascular development	Assistant Professor, Eastern Connecticut
Elizabeth R. Rochon	PhD 2015 Pitt Biological Sciences	ALK1 signaling is required for directed endothelial cell migration in the prevention of arteriovenous malformations	Postdoctoral Fellow, NIH T32, Pitt VMI
Amy C. Kunz	MSGC 2016 Pitt Human Genetics	Expression of <i>alk1</i> is regulated by a positive feedback mechanism involving blood flow and circulating ligand	Genetic Counselor, AGH

**1B. Major Advisor for Graduate Student Essays, Theses, Dissertations**

<b>Student</b>	<b>Degree /year</b>	<b>Document/Title</b>	<b>Current Position</b>
Bijun Li	MS 2019 Pitt Human Genetics	Zebrafish <i>bmp10</i> mutants as a model for HHT-associated high output heart failure	Looking for job
Thanhlong Gilbert Tran	MS 2019 Pitt Human Genetics	Advances in understanding the regulation of <i>acvr11</i> gene expression	Looking for job
Teresa L. Capasso	PhD Pitt Human Genetics	BMP10 in vascular development and disease	Current PhD student

**1C. Service on Masters or Doctoral Committees**

<b>Dates</b>	<b>Student</b>	<b>Degree</b>	<b>Title</b>
2003-2006	Victorino Briones	PhD Cell Biology, GUMC	Mechanisms of repression by transforming growth factor beta
2004-2006	Kara Foshay	PhD Cell Biology, GUMC	The function and regulation of Stat3 during mouse embryonic stem cell differentiation
2005-2008	Krissa Gibby	PhD Tumor Biology, GUMC	Effect of fibroblast growth factor binding protein in chick embryonic development and murine mammary development
2007-2012	Eric de Groh	PhD Program in Integrative Molecular Biology, Pitt	4-PTBA, a novel histone deacetylase inhibitor, stimulates renal progenitor cell proliferation
2007-2010	Deborah Farkas	PhD Biological Sciences, Pitt	Straightening out the mechanisms of axial elongation using mouse mutant analysis

**1C. Service on Masters or Doctoral Committees**

<b>Dates</b>	<b>Student</b>	<b>Degree</b>	<b>Title</b>
2008-2011	Matthew Farber	PhD Biological Sciences, Pitt	Shroom2 regulates endothelial morphogenesis and centrosome duplication through the specific sub-cellular recruitment of Rho-kinase
2009-2013	Yaw Adomako-Ankomah	PhD Biological Sciences, Pitt	Comparative analysis of gene duplication: impact of tandemly duplicated genes on trait evolution in <i>Toxoplasma gondii</i>
2010-2014	Erica McGreevy	PhD Biological Sciences, Pitt	Shroom3 and planar cell polarity couple apical constriction and convergent extension during neural tube morphogenesis
2011-2012	Chia-Yuan Chen	PhD Biomechanics, CMU	Characterization of hemodynamics using particle image velocimetry
2012-2013	William Kowalski	PhD Biomechanics, CMU	Quantification of vascular morphogenesis in the chick embryo and its relationship to the hemodynamic environment
2012-2014	Ardon Shorr	PhD Biological Science, CMU	(student took leave)
2015-2016	Sevinc Akcay	PhD Human Genetics, Pitt	Molecular consequences of elastin gene mutations in autosomal dominant cutis laxa and supraaortic stenosis
2015-2017	Ian Casci	PhD Human Genetics, Pitt	Identifying novel modifiers of fus-associated toxicity in a <i>Drosophila</i> model of amyotrophic lateral sclerosis
2015-2017	Sandeep Khatri	PhD Human Genetics, Pitt	Fibulin 4A in zebrafish development
2016-2018	Michelle Zorrilla	PhD Human Genetics, Pitt	Contribution of elastin to cardiovascular development in zebrafish
2016-2017	Megan Breski	PhD Human Genetics, Pitt	Engineering lysine demethylases to orthogonally probe cellular functions

**1C. Service on Masters or Doctoral Committees**

<b>Dates</b>	<b>Student</b>	<b>Degree</b>	<b>Title</b>
2017-present	Ekaterina Orlova	PhD Human Genetics, Pitt	In progress
2017-present	Bruce Nmezi	PhD Human Genetics, Pitt	In progress
2018-present	Erika Dreikorn	PhD Human Genetics, Pitt	In progress
2019-present	Morgan Sedorovitz	MS Human Genetics, Pitt	In progress

**1D. Service on Comprehensive or Qualifying Examination Committees**

<b>Dates</b>	<b>Student Population</b>	<b>Type of Exam</b>
2002-2006	Cell Biology PhD, GUMC (4)	Comprehensive (research proposal, outside topic)
2006-2014	Biological Sciences PhD, Pitt (3)	Comprehensive (research proposal, outside topic)
2006-2014	Program in Integrative Mol Biol PhD, Pitt (1) Biological Sciences PhD, CMU (1)	Comprehensive (dissertation research proposal)
2014-present	<u>Human Genetics PhD, Pitt (6)</u> <i>Ian Casci (2015), Megan Breski (2016), Sandeep Khatri (2016), Ekaterina Orlova (2017), Michelle Zorrilla (2017), Bruce Nmezi (2018)</i>	Comprehensive (dissertation research proposal)
	<u>Micro and Mol Gen PhD, Pitt (1)</u> <i>Jennifer Spengler (2019)</i>	
	<u>Human Genetics PhD, Pitt (9)</u> <i>Ian Casci (2014), Brandon Blobner (2015), Stephen McCalley (2015), Bruce Nmezi (2016), Ekaterina Orlova (2016), Teresa Capasso (2017), Bijun Li (2017), Erika Dreikorn (2018), Melissa Bulik (2019)</i>	Qualifying (paper presentation)
	<u>Human Genetics, MS, Pitt (1)</u> <i>Thanhlong Gilbert Tran (2019)</i>	Comprehensive (paper presentation)

**1E. Supervision of Post-Doctoral Students, Residents, and Fellows**

<b>Dates</b>	<b>Name</b>	<b>Position</b>	<b>Current Position</b>
12/2005-8/2006	Xiaofang Wu	Postdoctoral Fellow GUMC	Assistant Professor, Children's National Medical Center
6/2006-9/2006	Matthew R. Swift	Postdoctoral Fellow GUMC	Research Associate, GUMC
8/2006-12/2007	Bhupendra V. Shrivage	Postdoctoral Fellow Pitt Biological Sciences	Senior Scientist, Saaram Sciences, India
12/2007-3/2011	Paola Corti	Postdoctoral Fellow Pitt Biological Sciences	Research Assistant Professor Pitt School of Medicine
5/2015-4/2016	Elizabeth Rochon	Postdoctoral Fellow Pitt Human Genetics/ Biological Sciences	T32 Postdoctoral Fellow Pitt School of Medicine
2/2017-12/2017	Davide Treggiari	Postdoctoral Fellow Pitt Human Genetics	Scientist, University of Verona,
11/2017-present	William Okech	Postdoctoral Fellow Pitt Human Genetics	NA
4/2018-present	Xinyan Lu	Postdoctoral Fellow Pitt Human Genetics	NA

**1F1. Other teaching and training: Supervision of MS and PhD Rotation Students  
(F = Fall; S = Spring; Su = Summer)**

<b>Dates</b>	<b>Name</b>	<b>Program/Institution</b>
F2003	Kara Foshay	Cell Biology/GUMC
S2004	Tolib Sanni	Cell Biology/GUMC
F2005	Fengmin Li	Cell Biology/GUMC
F2006	Jessica Board	Biosci/Pitt
S2007	Matthew Farber	Biosci/Pitt
S2007	Grace Colletti	Biosci/Pitt
S2008	Caitlin Feather	Biosci/Pitt
S2008	Priyanka Upadhyai	Biosci/Pitt



**1F1. Other teaching and training: Supervision of MS and PhD Rotation Students**  
**(F = Fall; S = Spring; Su = Summer)**

<b>Dates</b>	<b>Name</b>	<b>Program/Institution</b>
F2008	Xiaobei Chen	Biosci/Pitt
Su2009	Lauren Brill	MSTP/Pitt
F2009	Ira Kukic	Biosci/Pitt
F2009	Corrine Mansfield	Biosci/Pitt
F2009	Tushar Gupta	Biosci/Pitt
F2010	Julia Barker	Biosci/Pitt
Su2011	Janelle Klaas	PIMB/Pitt
F2011	Lynley Doonan	Biosci/Pitt
F2012	Ji-Sup Yang	Biosci/Pitt
F2012	Yang Liu	Biosci/Pitt
F2012	Tess Henderson	PIMB/Pitt
F2012	Vera Procaccia	PIMB/Pitt
S2013	Jennifer McDaniels	Hot Metal Bridge/Pitt

**1F2. Other teaching and training: Supervision of Undergraduate Researchers**

<b>Dates Supervised</b>	<b>Name</b>	<b>Degree/year/ institution</b>	<b>Research Awards/Fellowships</b>	<b>Current Position</b>
1/2005-5/2006	Stephanie Steele	BS 2006 (GU)		Postdoc, San Diego Zoo Global
1/2007-12/2008	Katherine Kurzinski	BS 2008 (Pitt)	HHMI 5/2007-4/2008	MD
1/2007-4/2010	Katherine Somers	BS 2008 (Pitt)	HHMI 5/2009-7/2009	MD
8/2007-5/2009	Melanie (Warnes) Pepper	BS 2009 (Pitt)		Assistant Professor, Univ. N. Colorado

**1F2. Other teaching and training: Supervision of Undergraduate Researchers**

<b>Dates Supervised</b>	<b>Name</b>	<b>Degree/year/ institution</b>	<b>Research Awards/Fellowships</b>	<b>Current Position</b>
5/2008-8/2008	Jennifer Febbo	BS 2010 (Pitt)	HHMI 5/2008-8/2008	MD
1/2009-7/2010	Ashley Miller	BS 2012 (Pitt)		MD
9/2009-4/2010	John McCallum	BS 2010 (Pitt)		Program Coordinator, UPMC
5/2010-12/2010	Sarah Grech	BS 2013 (Pitt)	HHMI 5/2010-8/2010	DMD
1/2011-5/2013	Max Schubert	BS 2013 (Pitt)	HHMI 5/2011-8/2011, 5/2012-8/2012. Honors in Biological Sciences	MD
1/2011-12/2011	Sarai Martinez-Suazo	BS 2011 (Pitt)		MD
9/2011-12/2012	Donna Unke	BS 2014 (Pitt)		MPH/MBA program, Johns Hopkins
1/2012-4/2013	Catherine Ahn	BS 2013 (Pitt)		unknown
1/2012-5/2015	James Donovan	BS 2015 (Pitt)	HHMI 5/2012-4/2014 Samuel D. Colella Award, 5/2014-8/2014 Honors in Biological Sciences	Medical student, Temple University
9/2012-4/2013	Erin Lebold	BS 2015 (Pitt)		Medical student, Case Western Reserve
1/2013-4/2014	Harinee Suthakar	BS 2016 (Pitt)		Project lead, Project Destiny, Pittsburgh, PA
1/2013-4/2014	Rebekah Sayre	BS 2016 (Pitt)		EMT, Pittsburgh, PA
9/2014-7/2015	Brydie Huckestein	BS 2015 (Pitt)		PhD Student, IBGP, Pitt
9/2015-4/2016	Austin Hackman	BS 2018 (Pitt)		unknown

**1F2. Other teaching and training: Supervision of Undergraduate Researchers**

<b>Dates Supervised</b>	<b>Name</b>	<b>Degree/year/ institution</b>	<b>Research Awards/Fellowships</b>	<b>Current Position</b>
9/2016-4/2017	Katherine Shindle	BS 2018 (Pitt)		PhD student, Gender Studies, Indiana University
6/2017-8/2017	Rhea Bedi	BS 2019 (Pitt)		Pharmacy student, Pitt
9/2017-present	Su Diler	(BS 2020, Pitt)		Student
6/2019-7/2019	Marshelle Franklin	(BS 2021 Jackson State)	Pittsburgh undergraduate research diversity fellowship (PURDIP)	Student

**2. PROFESSIONAL ACTIVITIES: RESEARCH AND TRAINING**

<b>2A1. Grants and Contracts Received, as PI</b>					
<b>Years</b>	<b>Grant Number/Title</b>	<b>Source</b>	<b>Annual Direct Costs</b>	<b>% Effort</b>	<b>Status</b>
2003-2008 (1 year NCE)	033520N Investigation of the role of GC Unc-45 in zebrafish vascular development	AHA National Center	\$70,000	30	completed
2005-2012 (2 year NCE)	1R01HL079108 Alk1 regulation of embryonic angiogenesis	NIH/NHLBI	\$250,000	33	completed
2009-2011	Embryonic AVM prevention by pharmacological manipulation of vasodilation	Leslie Munzer Neurological Institute of Long Island	\$12,500	(no salary)	completed
2011-2012	12 In vivo Cell Biology Approach to Defining the Natural History of HHT-associated AVMs	HHT Foundation International (now CureHHT)	\$45,000	8.33	completed
2013-2015	13GRNT16830049 Enhancing ALK1 expression as an approach to HHT therapeutics	AHA Great Rivers Affiliate	\$70,000	8.33	completed
2013-2015	Uncovering causal genes for hereditary lymphedema	Small Grants Programs, Central Research and Development Fund, Pitt	\$8,000	(no salary)	completed

**2A1. Grants and Contracts Received, as PI**

Years	Grant Number/Title	Source	Annual Direct Costs	% Effort	Status
2016-2020	R01HL133009 BMP10 in cardiovascular development and hereditary hemorrhagic telangiectasia	NIH/NHLBI	\$270,000	30	active
2017-2021	R01HL136566 Interaction between blood flow and ALK1 signaling in AVM development	NIH/NHLBI	\$290,000	30	active

**2A2. Grants and Contracts Received, as co-PI**

Years	Grant Number/Title	Source	Annual Direct Costs	% Effort	Status
2015-2016	ALK1 signaling in development of superior cavopulmonary anastomosis-associated pulmonary arteriovenous malformations	VMI/HVI Innovator Award, University of Pittsburgh	\$25,000	(no salary)	completed

**2A3. Grants and Contracts Received, as co-I**

Years	Grant Number/ Title	Source	Annual Direct Costs	% effort	Status
2015-2020	R01HL090648 Genetics of extracellular matrix in health and disease	NIH/NHLBI	\$395,000	5	completed
2017-2021	WX18WH-17-1-0429. Pathogenesis of HHT	DOD CDMRP	\$315,000	20	active

**2B. Invited Lectureships and Major Seminars Related to Research**

<b>Date</b>	<b>Title</b>	<b>Venue</b>
11/2001	Using the zebrafish to study development of the vertebrate vasculature	Midwest/Mid-Atlantic Region Teratology Association Fall Meeting, Split Rock Resort, PA
12/2003	Alk1 signaling in vascular development	Biology Department, Georgetown University, Washington, DC
1/2005	Alk1 signaling in zebrafish vascular development	Nephrology Department, Georgetown University Medical Center, Washington, DC
3/2005	TGF- $\beta$ signaling in zebrafish vascular development	Department of Biological Sciences, George Washington University, Washington, DC
2/2007	TGF- $\beta$ signaling in blood vessel development	Department of Environmental and Occupational Health, University of Pittsburgh Graduate School of Public Health, Pittsburgh, PA
3/2008	How to make an arteriovenous malformation: insights from zebrafish	Vascular Biology Program, Harvard Medical School, Boston, MA
4/2008	Zebrafish models of arteriovenous shunting	Allegheny-Erie Society of Toxicology Spring Meeting, Pittsburgh, PA
2/2009	Hereditary Hemorrhagic Telangiectasia: insights from zebrafish	Department of Human Genetics, University of Pittsburgh Graduate School of Public Health, Pittsburgh, PA
4/2009	How to make an arteriovenous malformation: insights from zebrafish	Department of Biological Sciences, Carnegie Mellon University, Pittsburgh, PA
9/2009	Interaction between Alk1 signaling and blood flow in vascular development	Biomechanics Day, University of Pittsburgh/Carnegie Mellon University, Pittsburgh, PA
4/2010	Arteriovenous malformations: insights from zebrafish	Senior Vice Chancellor's Research Seminar, University of Pittsburgh School of Medicine, Pittsburgh, PA

**2B. Invited Lectureships and Major Seminars Related to Research**

<b>Date</b>	<b>Title</b>	<b>Venue</b>
9/2010	Embryonic AVM prevention by pharmacological manipulation of vasodilation	Research and Advanced Developments in Arteriovenous Malformations of the Brain Symposium. Great Neck, NY
9/2010	Embryonic AVM prevention by pharmacological manipulation of vasodilation	Arteriovenous Malformations of the Brain CME, Winthrop University Hospital, Mineola, NY
10/2010	Arteriovenous malformations: insights from zebrafish	Fourth Annual Ri.Med Foundation Symposium, Palermo, Italy
1/2011	Arteriovenous malformations in zebrafish: going with the flow	Department of Neurological Surgery, University of Pittsburgh School of Medicine, Pittsburgh, PA
6/2011	Interaction between genetics and blood flow in development of arteriovenous malformations	Third United States National Committee on Biomechanics Symposium on Frontiers in Biomechanics: Mechanics of Development. Farmington, PA
10/2011	Bright lights, not-so-big fishy: imaging developmental processes in fluorescent zebrafish	Science 2011. University of Pittsburgh. Pittsburgh, PA
1/2012	Interaction between genetics and blood flow in development of arteriovenous malformations	Cardiovascular Research Center, Yale School of Medicine, New Haven, CT
2/2012	Interaction between genetics and blood flow in development of arteriovenous malformations	Department of Developmental Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA
10/2012	Interaction between genetics and blood flow in development of arteriovenous malformations	Genetics and Genomics of Vascular Disease Workshop. Asilomar Conference Grounds, Pacific Grove, CA
12/2012	Alk1 signaling in vascular development	Department of Physiology and Functional Genomics, University of Florida. Gainesville, FL

**2B. Invited Lectureships and Major Seminars Related to Research**

<b>Date</b>	<b>Title</b>	<b>Venue</b>
2/2013	Interaction between genetics and blood flow in development of arteriovenous malformations	Department of Human Genetics, University of Pittsburgh Graduate School of Public Health, Pittsburgh, PA
10/2013	Interaction between genetics and blood flow in development of arteriovenous malformations	Vascular Medicine Institute, University of Pittsburgh School of Medicine, Pittsburgh, PA
1/2014	Interaction between genetics and blood flow in development of arteriovenous malformations	Department of Biological Sciences, Duquesne University, Pittsburgh, PA
4/2014	Interaction between genetics and blood flow in development of arteriovenous malformations	Drug Discovery Institute, University of Pittsburgh, Pittsburgh, PA
10/2014	AVM development in a zebrafish model of HHT2	Vascular Biology 2014, Asilomar Conference Grounds, Pacific Grove, CA
1/2015	Etiology of HHT-associated arteriovenous malformations	HHT Center, University of Utah Salt Lake City, UT
2/2015	Etiology of HHT-associated arteriovenous malformations	Vascular Medicine Institute, University of Pittsburgh, Pittsburgh, PA
3/2015	AVM development in a zebrafish model of HHT2	Department of Pharmacology, Ohio State, Columbus, OH
6/2015	What is the role of second hits in the development of AVMs? (Workshop Leader)	11 <sup>th</sup> International HHT Scientific Conference, Captiva Island, FL
1/2016	Etiology of HHT-associated arteriovenous malformations	Department of Environmental and Occupational Health, University of Pittsburgh Graduate School of Public Health, Pittsburgh, PA
2/2016	AVM development in a zebrafish model of HHT2	Gladstone Institute of Cardiovascular Disease and Cardiovascular Research Institute, UCSF, San Francisco, CA



**2B. Invited Lectureships and Major Seminars Related to Research**

<b>Date</b>	<b>Title</b>	<b>Venue</b>
3/2016	Molecular and cellular mechanisms of AVM development	Department of Cell and Molecular Biology, Tulane University, New Orleans, LA
9/2016	Genome editing: theory and practice	Department of Human Genetics Retreat, University of Pittsburgh Graduate School of Public Health, Pymatuning Biological Station, Linesville, PA
3/2017	Zebrafish models of human disease	Long Life Family Study Bioinformatics Meeting, Bethesda, MD
8/2017	Microangiopathy in HHT	International Workshop on Scleroderma Research, Pittsburgh, PA
10/2017	BMP signaling in cardiovascular development and disease	Department of Structural Biology, University of Pittsburgh, Pittsburgh, PA
11/2017	BMP signaling in cardiovascular development and disease	Department of Biochemistry, Georgetown University Medical Center, Washington, DC
12/2017	BMP signaling in cardiovascular development and disease	Division of Human Genetics Duke University, Durham NC
2/2018	BMP signaling in cardiovascular development and disease	Distinguished Seminar Series, Department of Genetics and Department of Cell and Developmental Biology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA
2/2018	ALK1 signaling in the development of CVPA-associated pulmonary AVMs	Vascular Medicine Institute, University of Pittsburgh, Pittsburgh, PA
3/2018	BMP signaling in cardiovascular development and disease	Department of Neurobiology Barrow Neurological Institute Phoenix, AZ

**2B. Invited Lectureships and Major Seminars Related to Research**

<b>Date</b>	<b>Title</b>	<b>Venue</b>
3/2019	ALK1 signaling in cardiovascular development and disease	Vascular Medicine Institute, University of Pittsburgh, Pittsburgh, PA
6/2019	HHT: Cellular mechanisms of disease (Workshop leader)	13 <sup>th</sup> International HHT Scientific Conference, San Juan, Puerto Rico

**PUBLICATIONS**

legend: † undergraduate student †† graduate student ††† postdoctoral fellow \* technician

**1. REFEREED ARTICLES**

1. **Roman, B.L.**, Sommer, R.J., Shinomiya, K., and Peterson, R.E. (1995). *In utero* and lactational exposure of the male rat to 2,3,7,8-tetrachlorodibenzo-p-dioxin: Impaired prostate growth and development without inhibited androgen production. *Toxicol. Appl. Pharmacol.* **134**, 241-250.
2. **Roman, B.L.**, Pollenz, R.S., and Peterson, R.E. (1998). Responsiveness of the adult male rat reproductive tract to 2,3,7,8-tetrachlorodibenzo-p-dioxin exposure: Ah receptor and ARNT expression, CYP1A1 induction, and Ah receptor down-regulation. *Toxicol. Appl. Pharmacol.* **150**, 228-239.
3. **Roman, B.L.**, and Peterson, R.E. (1998). *In utero* and lactational exposure of the male rat to 2,3,7,8-tetrachlorodibenzo-p-dioxin impairs prostate development: 1. Effects on gene expression. *Toxicol. Appl. Pharmacol.* **150**, 240-253.
4. **Roman, B.L.**, Timms, B.G., Prins, G.S., and Peterson, R.E. (1998). *In utero* and lactational exposure of the male rat to 2,3,7,8-tetrachlorodibenzo-p-dioxin impairs prostate development: 2. Effects on growth and cytodifferentiation. *Toxicol. Appl. Pharmacol.* **150**, 254-270.
5. **Roman, B.L.**, Pham, V.N., Bennett, P.E., and Weinstein, B.M. (1999). Non-radioisotopic AFLP method using PCR primers fluorescently labeled with Cy5. *Biotechniques* **26**, 236-238.
6. Theobald, H.M., **Roman, B.L.**, Lin, T.M., Ohtani, S., Chen, S.W., and Peterson, R.E. (2000). 2,3,7,8-tetrachlorodibenzo-p-dioxin inhibits luminal cell differentiation and androgen responsiveness of the ventral prostate without inhibiting prostatic 5 $\alpha$ -dihydrotestosterone formation or testicular androgen production in rat offspring. *Toxicol. Sci.* **58**, 324-338.
7. Motoike, T., Loughna, S., Perens, E., **Roman, B.L.**, Liao, W., Chau, T.C., Richardson, C.D., Kawate, T., Kuno, J., Weinstein, B.M., Stainier, D.Y., and Sato, T.N. (2000). Universal GFP reporter for the study of vascular development. *Genesis* **28**, 75-81.
8. Pham, V.N., **Roman, B.L.**, and Weinstein, B.M. (2001). Isolation and expression analysis of three zebrafish angiopoietin genes. *Devel. Dyn.* **221**, 470-474.
9. **Roman, B.L.**, Pham, V.N., Lawson, N.D., Kulik, M., Childs, S., Lekven, A.C., Garrity, D.M., Moon, R.T., Fishman, M.C., Lechleider, R.J., and Weinstein, B.M. (2002). Disruption of *acvr11* increases endothelial cell number in zebrafish cranial vessels. *Development* **129**, 3009-3019.
10. Park, S.O, Lee, Y.J., Seki, T., Hong, K.H., Fleiss, N., Jiang, Z., Park, A.\* , Wu, X.†††, Kaartinen, V., **Roman, B.L.**, and Oh, S.P. (2008). ALK5- and TGFBR2-independent role of ALK1 in the pathogenesis of hereditary hemorrhagic telangiectasia type 2. *Blood* **111**, 633-642. PMID: PMC2200847.
11. Anderson, M.J.††, Pham, V.N., Vogel, A.M., Weinstein, B.M., and **Roman, B.L.** (2008). Loss of *unc45a* precipitates arteriovenous shunting in the aortic arches. *Devel. Biol.* **318**, 258-267. PMID: PMC2483962.

12. Cianciolo Cosentino, C., **Roman, B.L.**, Drummond, I.A., and Hukriede, N.A. (2010). Intravenous microinjections of zebrafish larvae to study acute kidney injury. *J. Vis. Exp.* **42**, 2079. PMID: PMC3156013.
13. Laux, D.W. <sup>††</sup>, Febbo, J.A. <sup>†</sup>, and **Roman, B.L.** (2011). Dynamic Analysis of BMP-Responsive Smad Activity in Live Zebrafish Embryos. *Devel. Dyn.* **240**, 682-694. PMID: PMC4287217.
14. Corti, P. <sup>†††</sup>, Young, S. <sup>\*</sup>, Chen, C.Y., Patrick, M.J., Rochon, E.R. <sup>††</sup>, Pekkan, K., and **Roman, B.L.** (2011). Interaction between *alk1* and blood flow in the development of arteriovenous malformations. *Development* **138**, 1573-1582. PMID: PMC3062425.
15. Fujita, M., Cha, Y., Pham, V.N., Sakurai, A., **Roman, B.L.**, Gutkind, J.S., and Weinstein, B.M. (2011). Assembly and patterning of the vascular network of the vertebrate hindbrain. *Development* **138**, 1705-1715. PMID: PMC3074447.
16. Chen, C.Y., Patrick, M.J., Corti, P. <sup>†††</sup>, Kowalski, W., **Roman, B.L.**, and Pekkan, K. (2011). Analysis of early embryonic great vessel microcirculation in zebrafish using high-speed confocal  $\square$ PIV. *Biorheology* **48**, 305-321.
17. Kim, J.D., Kang, H., Larrivee, B., Lee, M.Y., Mettlen, M., Schmid, S.L., **Roman, B.L.**, Qyang, Y., Eichmann, A., and Jin, S.W. (2012). Context-dependent proangiogenic function of bone morphogenetic protein signaling is mediated by disabled homolog 2. *Devel. Cell* **23**, 441-448. PMID: PMC3659797.
18. Watkins, S.C, Maniar, S., Mosher, M., **Roman, B.L.**, Tsang, M., and St. Croix, C.M. (2012). High resolution imaging of vascular function in zebrafish. *PLoS One* **7**, e44018. DOI 10.1371/journal.pone.0044018. PMID: PMC3431338.
19. Laux, D.W. <sup>††</sup>, Young, S. <sup>\*</sup>, Donovan J.P. <sup>†</sup>, Mansfield, C.J. <sup>††</sup>, Upton, P.D., and **Roman, B.L.** (2013). Circulating Bmp10 acts through endothelial Alk1 to mediate flow-dependent arterial quiescence. *Development* **140**, 3403-3412. PMID: PMC3737721.
20. Wooderchuk-Donahue, W.L., McDonald, J., O'Fallon, B., Upton, P.D., Li, W., **Roman, B.L.**, Young, S. <sup>\*</sup>, Plant, P., Fulop, G., Langa, C., Morrell, N.W., Botella, L.M., Bernabeu, C., Stevenson, D.A., Runo, J.R., and Bayrak-Toydemir, P. (2013). BMP9 mutations cause a vascular anomaly syndrome with phenotypic overlap with hereditary hemorrhagic telangiectasia. *Am. J. Hum. Gen.* **93**, 530-537. PMID: PMC3769931.
21. Lee, J., Esmaily Moghadam, M., Kung, E., Cao, H., Beebe, T., Miller, Y.I., **Roman, B.L.**, Lien, C.L., Chi, N.C., Marsden, A.L., and Hsiai, T. (2013). Moving domain computational fluid dynamics to interface with an embryonic model of cardiac morphogenesis. *PLoS One* **8**, e72924 doi:10.1371/journal.pone.0072924. PMID: PMC3751826.
22. Rochon, E.R. <sup>††</sup>, Wright, D.S. <sup>\*</sup>, Schubert, M.M. <sup>†</sup>, and **Roman, B.L.** (2015). Context-specific interactions between Notch and ALK1 cannot explain ALK1-associated arteriovenous malformations. *Cardiovasc. Res.* **107**, 143-152. PMID: PMC4498135.
23. Arthur, H., Geithoff, U., Gossage, J.R., Hughes, C.C., Lacombe, P., Meek, M.E., Oh, P., **Roman, B.L.**, Tretola, S.O., Velthuis, S., Wooderchak-Donahue, W. (2015). Executive summary of the 11<sup>th</sup> HHT international scientific conference. *Angiogenesis* **18**, 511-524. **Author list is alphabetical**
24. Chiba, T., Skrypyk, N., Skvarca, L.B., Penchev, R., Zhang, K.X., Rochon, E.R. <sup>††</sup>, Fall, J.L., Pauksakon, P., Yang, H., **Roman, B.L.**, Zhang, M.Z., Harris, R., Hukriede, N.A., and De Caestecker, M.P. (2016). Retinoic acid signaling coordinates macrophage-dependent injury and repair after AKI. *J. Amer. Soc. Nephrol.* **27**, 495-508. PMID: PMC4731115.

25. Rochon, E.R. <sup>††</sup>, Menon, P.G., and **Roman, B.L.** (2016). Alk1 controls arterial endothelial cell migration in lumenized vessels. *Development* **143**, 2593-2602. PMID: PMC4958337.
26. Gau, D., Veon, W., Capasso, T.L. <sup>††</sup>, Bottcher, R., Shroff, S., **Roman, B.L.**, and Roy, P. (2017). Pharmacological intervention of MKL/SRF signaling by CCG-1423 impedes endothelial cell migration and angiogenesis. *Angiogenesis* **20**, 663-672. PMID: PMC5985144.
27. Skvarca, L.B., Han, H., Espiritu, E., Missinato, M., Rochon, E. <sup>†††</sup>, McDaniels, M.D., Bais, A.S., **Roman, B.L.**, Waxman, J.S., Watkins, S., Davidson, A.J., Tsang, M., and Hukriede, N.A. (2019). Enhancing regeneration after acute kidney injury by promoting cellular dedifferentiation in zebrafish. *Dis Model Mech* **12**, dmm037390 doi: 10.1242/dmm.037390. PMID: PMC6505474.
28. Capasso, T.L. <sup>††</sup>, Li, B. <sup>††</sup>, Volek, H.J., Khalid, W., Rochon, E.R. <sup>†††</sup>, Anbalagan, A.A. \*, Villanueva, F.S., Kim, K., and **Roman, B.L.** (2019). BMP10 is the sole required ligand for endothelial ALK1 signaling. *Circulation Research*, in review.

## 2. BOOKS AND BOOK CHAPTERS

1. **Roman, B.L.**, and Peterson, R.E. (1998). Developmental male reproductive toxicology of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) and PCBs. In *Reproductive and Developmental Toxicology* (K.S. Korach, Ed.). Marcel Dekker, New York, pp. 593-624.
2. **Roman, B.L.**, Marchuk, D.A., Trerotola, S.O., and Pyeritz, R.E. (2019). Hereditary hemorrhagic telangiectasia. In *Emery and Rimoin's Principles and Practice of Medical Genetics 7<sup>th</sup> ed.* (R.E. Pyeritz, BR.Korf, W.Grody, eds). Elsevier, Amsterdam.

## 3. PUBLISHED PROCEEDINGS

1. **Menon, P.G.**, Rochon, E.R. <sup>††</sup>, and Roman, B.L. (2016). In vivo cell tracking to quantify endothelial cell migration during zebrafish angiogenesis. Proc SPIE 9784, Medical Imaging 2016: Image Processing, 97844A.

## 4. INVITED REVIEW ARTICLES (PEER REVIEWED) AND EDITORIALS

1. **Roman, B.L.**, and Weinstein, B.M. (2000). Building the vertebrate vasculature: research is going swimmingly. *Bioessays* **22**, 882-893. Review.
2. **Roman, B.L.** and Pekkan, K. (2012). Mechanotransduction in embryonic vascular development. *Biomech. Mod. Mechanobiol.* **11**, 1149-1168. Review. **First and corresponding author.**
3. **Roman, B.L.** and Finegold, D.N. (2015). Genetic and Molecular Basis for Hereditary Hemorrhagic Telangiectasia. *Current Genetic Medicine Reports* **3**, 35-47. Review. **First and corresponding author.**
4. **Roman, B.L.** and St. Hilaire, C. (2016). Catching a disease: a molecular trap as a therapy for PAH. *Am. J. Resp. Crit. Care Med* **194**, 1047-1049. Editorial.
5. **Roman, B.L.** and Hinck, A.P. (2017). ALK1 signaling in development and disease: new paradigms. *Cell Mol Life Sci* **74**, 4539-4560. Review. **First and corresponding author.**

6. Cuttica, M.J. and **Roman, B.L.** (2017). Classifying pulmonary hypertension in hereditary hemorrhagic telangiectasia: hemodynamics matter. *Am. J. Resp. Crit. Care Med* **196**, 1244-1246. Editorial.

## 5A. ABSTRACTS SELECTED FOR CONFERENCE ORAL PRESENTATIONS

legend: <u>presenter</u> † undergraduate student    †† graduate student    ††† postdoctoral fellow
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1. Weinstein, B.M., Hong, S.K., Huh, T.L., Pham, V.N., Fouquet, B., Serluca, F., Fishman, M.C., **Roman, B.L.**, and Bennett, P.N. Dissecting trunk axial vessel formation using the zebrafish. *FASEB J.* **13** (5), A694. Experimental Biology, Washington, DC, April 1999.
2. **Roman, B.L.**, Isogai, S., and Weinstein, B.M. *Violet beauregarde* disrupts cranial blood vessel formation in the zebrafish. 4<sup>th</sup> International Conference on Zebrafish Development and Genetics, Cold Spring Harbor Laboratory, NY, 2000.
3. **Roman, B.L.**, Pham, V.N., Childs, S., Lekven, A.C., Neubaum, D., Moon, R.T., Fishman, M.C., and Weinstein, B.M. The zebrafish mutant *violet beauregarde* exhibits abnormal cranial blood vessel development due to a lesion in *alk1*, the gene responsible for human hereditary hemorrhagic telangiectasia type 2. *Dev. Biol.* **235**, 293. SDB 60<sup>th</sup> Annual Meeting, Seattle, WA, July 2001.
4. Anderson, M.J. ††, Park, A., Hsieh, S.H. ††, and **Roman, B.L.** Truncation of *GC unc-45* causes vessel defects in zebrafish. Mid-Atlantic Society for Developmental Biology, Washington, DC, May 2005.
5. **Roman, B.L.**, Park, A., and Elson, D.A. Evidence supporting a role for Alk1 in angiogenic resolution. Developmental Vascular Biology Workshop II, Asilomar Conference Center, Pacific Grove, CA, February 2006.
6. **Roman, B.L.**, Park, A., and Wu, X. †††. Alk1 activation favors resolution in the zebrafish endothelium. NIH Workshop-Hereditary Hemorrhagic Telangiectasia: Vascular Biology and Pathophysiology. Bethesda, MD, June 2006.
7. Anderson, M.J. ††, Potocki, A., and **Roman, B.L.** *GC unc-45* is required for proper junction formation between aortic arches 5 and 6 and the secondary lateral dorsal aorta. 7<sup>th</sup> International Conference on Zebrafish Development and Genetics, Madison, WI, June 2006.
8. **Roman, B.L.**, Shrivage, B.V. †††, and Board, J. ††. Identification of upstream activators and downstream targets of Alk1. Developmental Vascular Biology Workshop III, Asilomar Conference Center, Pacific Grove, CA, February 2008.
9. Corti, P.A. †††, Young, S.A., Laux, D.W. ††, and **Roman, B.L.** Alk1 regulates blood vessel caliber in response to flow. 8<sup>th</sup> International Hereditary Hemorrhagic Telangiectasia Scientific Conference, Santander, Spain, May 2009.
10. Corti, P.A. †††, Young, S.A., Laux, D.W. ††, Rochon, E.R. ††, and **Roman, B.L.** Interaction between *alk1* and blood flow in development of arteriovenous malformations. Developmental Vascular Biology Workshop IV, Asilomar Conference Center, Pacific Grove, CA, February 2010.
11. Rochon, E.R. ††, Young, S., Corti, P. †††, Chen, C.Y., Patrick, M.J., Pekkan, K. and **Roman, B.L.** Alk1 regulation of flow-responsive gene expression. 9<sup>th</sup> International Hereditary Hemorrhagic Telangiectasia Scientific Conference, Kemer, Turkey, May 2011.

12. Laux, D.W.<sup>††</sup>, Rochon, E.R.<sup>††</sup>, Young, S., and **Roman, B.L.** Identification of a novel blood flow-responsive signaling pathway involving Alk1 and pSmad1/5/9. Mid-Atlantic Society for Developmental Biology, Penn State University, University Park, PA, May 2012.
13. Laux, D.W.<sup>††</sup>, Young, S.Y., Donovan, J.P.<sup>†</sup>, Mansfield, C.J.<sup>††</sup>, Upton, P.D., and **Roman, B.L.** Circulating Bmp10 acts through endothelial Alk1 to mediate flow-dependent arterial quiescence. 10<sup>th</sup> International Hereditary Hemorrhagic Telangiectasia Scientific Conference, Cork, Ireland, June 2013.
14. Wooderchak-Donahue, W., McDonald, J., O'Fallon, B., Upton, P.D., Li, W., **Roman, B.L.**, Young, S., Plant, P., Tamas, G., Langa, C., Morrell, N.W., Botella, L.M., Bernabeu, C., Stevenson, D.A., Runo, J.R., Bayrak-Toydemir, P. Mutations on a new gene cause a new vascular malformation disorder similar to hereditary hemorrhagic telangiectasia. 10<sup>th</sup> International Hereditary Hemorrhagic Telangiectasia Scientific Conference, Cork, Ireland, June 2013.
15. **Roman, B.L.**, Rochon, E.R.<sup>††</sup>, Wright, D.S., and Schubert, M.M. Arteriovenous malformations in *alk1* mutants arise independently of perturbations in Notch signaling. *Angiogenesis* **18** (4), 544. 11<sup>th</sup> International HHT Scientific Conference, Captiva, FL. June 2015.
16. Capasso, T.L.<sup>††</sup>, Li, B.<sup>††</sup>, Menon, P., and **Roman, B.L.** Bmp10 is necessary for Alk1 activation in skin and liver vasculature throughout life. 13<sup>th</sup> International Zebrafish Conference, Madison, WI, June 2018.
17. Zorrilla, M., Givi, J., Khalid, W., Watkins, S., Kim, K., **Roman, B.L.**, and Urban, Z. Zebrafish elastin A is required for cardiac valve development. NIMH-NHLBI Heart and Soul Workshop, April 2019.
18. Capasso, T.L.<sup>††</sup>, Li, B.<sup>††</sup>, Volek, H., Khalid, W., Rochon, E.R.<sup>†††</sup>, Anbalagan, A., Villanueva, F., Kim, K., **Roman, B.L.** BMP10 is the sole required ligand for endothelial Alk1 signaling. 13<sup>th</sup> International Hereditary Hemorrhagic Telangiectasia Scientific Conference, San Juan, Puerto Rico, June 2019.
19. Schwartz, T., Hinck, C., Anbalagan, A., **Roman, B.L.**, and Hinck, A.P. Investigation of BMP-9/10 heterodimer formation in vitro. 13<sup>th</sup> International Hereditary Hemorrhagic Telangiectasia Scientific Conference, San Juan, Puerto Rico, June 2019.

## 5B. ABSTRACTS SELECETED FOR CONFERENCE POSTER PRESENTATIONS

legend: <u>presenter</u> † undergraduate student    †† graduate student    ††† postdoctoral fellow
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1. SundarRaj, N., Stugan, A., **Roman, B.**, Anderson, S., and Thoft, R.A. (1991). Regional heterogeneity in desmosomal complexes in the cornea and limbus. *Invest. Ophthalm. Vis. Sci.* **32**, 1072.
2. Anderson, S., **Roman, B.**, and SundarRaj, N. (1992). A new extracellular matrix protein with unique distribution in the cornea and limbus. *Invest. Ophthalm. Vis. Sci.* **33**, 1238.
3. Chen, S.W., **Roman, B.L.**, Saroya, S.Z., Shinomiya, K., Moore, R.W., and Peterson, R.E. (1993). *In utero* exposure to 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) does not impair testosterone production by fetal rat testes. *Toxicologist* **13**, 104. SOT Annual Meeting, New Orleans, LA, March 1993.
4. Chaffin, C.L., **Roman, B.L.**, Peterson, R.E., and Hutz, R.J. (1994). Perinatal exposure to low-dose TCDD alters levels of ovarian estrogen- and dioxin-receptor mRNA in peri-pubertal rats. *Toxicologist* **14**, 197. SOT Annual Meeting, Dallas, TX., March 1994.

5. **Roman, B.L.**, Sommer, R.J., Shinomiya, K., and Peterson, R.E. (1994). Perinatal exposure to 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) decreases androgen-dependent organ weights in male rats without inhibiting testicular androgen production. *Toxicologist* **14**, 382. SOT Annual Meeting, Dallas, TX, March 1994.
6. **Sommer, R.J., Roman, B.L.**, Hirshfield, A.N., and Peterson, R.E. (1995). Developmental toxicity of dioxin in the female rat: external genitalia malformations without alterations in primordial follicle number. *Toxicologist* **15**, 292. Society of Toxicology Annual Meeting, Baltimore, MD, March 1995.
7. **Klinefelter, G.R., Roman, B.L.**, and Peterson, R.E. (1995). A single gestational TCDD exposure alters protein expression in the adult rat epididymis. *Toxicologist* **15**, 233. Society of Toxicology Annual Meeting, Baltimore, MD, March 1995.
8. **Roman, B.L.**, Pollenz, R.S., Nitta, H., Cooke, P.S., and Peterson, R.E. (1995). Distribution of the aryl hydrocarbon receptor (AhR) in the postpubertal male reproductive system. *Toxicologist* **15**, 237. Society of Toxicology Annual Meeting, Baltimore, MD, March 1995.
9. **Chaffin, C.L., Roman, B.L.**, Peterson, R.E., and Hutz, R.J. (1995). Prenatal exposure to low-dose TCDD augments levels of uterine estrogen receptor mRNA in peri-pubertal rats. *Biol. Reprod.* **50**, suppl. 1, 76. SSR Annual Meeting, Davis, CA, July 1995.
10. **Timms, B.G.**, Barton, L.D., Burbach, A., Peterson, R.E., **Roman, B.L.**, and vom Saal, F. Dioxin inhibits prostate development in rats. Society for Basic Urological Research, Rotterdam, The Netherlands, 1995.
11. **Roman, B.L.**, Peterson, R.E., Timms, B.G., Barton, L.D., Burbach, A., and vom Saal, F. (1996). *In utero* 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) exposure decreases the number of epithelial buds in the fetal rat prostate. *Fundam. Appl. Toxicol.* **30**, suppl. 1, 144. SOT Annual Meeting, Anaheim, CA, March 1996.
12. **Roman, B.L.**, and Peterson, R.E. (1997). *In utero* and lactational 2,3,7,8-tetrachlorodibenzo-p-dioxin exposure decreases the abundance of androgen-regulated mRNAs in the rat prostate. *Fundam. Appl. Toxicol.* **36**, suppl. 1, 131. SOT Annual Meeting, Cincinnati, OH, March 1997.
13. **Pollenz, R.S., Roman, B.L.**, and Peterson, R.E. (1998). Down regulation of Ah receptor protein in reproductive tract of male rats treated with TCDD. *Toxicol. Sci.* **42**, suppl. 1, 2488 Society of Toxicology Annual Meeting, Seattle, WA, March 1999.
14. **Roman, B.L.**, Fouquet, B., Serluca, F.C., Bennett, P., Pham, V., Fishman, M.C., and Weinstein, B.M. Studying the embryogenesis of the vascular system using the zebrafish. 3<sup>rd</sup> International Conference on Zebrafish Development and Genetics, Cold Spring Harbor Laboratory, 1998.
15. **Roman B.L.**, Pham, V.N., Bennett, P.E., and Weinstein, B.M. (1999). Positional cloning of a gene responsible for a localized defect in the patterning of the zebrafish dorsal aorta. *FASEB J.* **13** (4), A532. Experimental Biology, Washington DC, April 1999.
16. **Pham, V.N.**, Hong, S.K., Huh, T.L., Lawson, N.D., **Roman, B.L.**, Vogel, A.M., Fouquet, B., Serluca, F.C., Bennett, P.E., Fishman, M.C., and Weinstein, B.M. (1999). Studying trunk vessel formation using the zebrafish. *Devel. Biol.* **210**, 211. SDB Annual Meeting, University of Virginia, June, 1999.
17. **Vogel, A.M.**, **Roman, B.L.**, and Weinstein, B.M. Genetic analysis of the development of the vascular system in zebrafish. *Dev. Biol.* **210**, 211. SDB Annual Meeting, University of Virginia, June, 1999.



20. Subramanian, R., **Roman, B.**, Lawson, N., Pham, V., and Weinstein, B. The formation of vascular smooth muscle in the zebrafish. 4<sup>th</sup> International Conference on Zebrafish Development and Genetics, Cold Spring Harbor Laboratory, NY, 2000.
18. **Roman, B.L.**, Vogel, A.M., Pham, V.N., and Weinstein, B.M. (2002). Aberrant aortic arch formation in the zebrafish mutant, *kurzschluss*. 5<sup>th</sup> International Conference on Zebrafish Development and Genetics, Madison, WI, June 2002.
19. Isogai, S., Lawson, N.D., **Roman, B.L.**, Torrealday, S., and Weinstein, B.M. (2002). Dynamic imaging of embryonic blood vessel formation. 5<sup>th</sup> International Conference on Zebrafish Development and Genetics, Madison, WI, June 2002.
20. Roman B.L., Pham, V.N., Vogel, A.M., Weinstein, B.M., (2003). Mutations in *kurzschluss* cause aberrant aortic arch connections and compromise vascular and cardiac integrity in the zebrafish. *FASEB J.* **17** (4), A351. Experimental Biology, San Diego, CA, April 2003
21. **Roman, B.L.**, Pham, V.N., Vogel, A.M., and Weinstein, B.M. (2003). Mutations in *GC unc-45* cause aberrant aortic arch connections and compromise vascular integrity in the zebrafish embryo. *Endothelium* **10** (6), 359. NAVBO Workshop on Vascular Development, Asilomar Conference Center, Pacific Grove, CA, 2003.
22. **Roman, B.L.**, Pham, V.N., Vogel, A.M., and Weinstein, B.M. Mutations in *GC-unc45* cause aberrant aortic arch connections and compromise vascular integrity in the zebrafish embryo. Developmental Vascular Biology Workshop I, Asilomar Conference Center, Pacific Grove, CA, February 2004.
23. Park, A., Kulik, M., Pham, V.N., Weinstein, B.M., Lechleider, R.J, and **Roman, B.L.** TGF-beta signaling in zebrafish vascular development. 6<sup>th</sup> International Conference on Zebrafish Development and Genetics, Madison, WI, June 2004.
24. Anderson, M.J. <sup>††</sup> and **Roman, B.L.** Vertebrate aortic arch development: Insights from zebrafish. AHA Research Symposium, Chicago, IL, November 11, 2006.
25. Anderson, M.J. <sup>††</sup> and **Roman, B.L.** Aberrant ventral aorta patterning causes an aortic arch-associated arteriovenous malformation in *kurzschluss* mutants. 2<sup>nd</sup> Strategic Conference of Zebrafish Investigators, Asilomar Conference Center, Pacific Grove, CA, February 2007.
26. Anderson, M.J. <sup>††</sup> and **Roman, B.L.** (2007). The role of *unc45a* in the production of aortic arch malformations in the zebrafish *kus* mutant. *FASEB J* **21** (6), LB6. Experimental Biology, Washington, DC, April 2007.
27. Anderson, M.J. <sup>††</sup>, and **Roman, B.L.** Blood flow modifies vessel but not cartilage mispatterning in pharyngeal arches of *unc45a* zebrafish mutants. Developmental Vascular Biology and Genetics Workshop III, Asilomar Conference Center, Pacific Grove, CA, January 2008.
28. Corti, P. <sup>†††</sup>, Young, S., Laux, D.W. <sup>††</sup>, and **Roman, B.L.** Alk1 regulates blood vessel caliber in response to flow. Third Strategic Conference of Zebrafish Investigators, Asilomar Conference Center, Pacific Grove, CA, January 2009.
29. Corti, P. <sup>†††</sup> and **Roman, B.L.** Vascular remodeling is regulated by Alk1 in response to flow. Gordon Conference, Vascular Cell Biology, Ventura, CA, March 2009.
30. Laux, D.W. <sup>††</sup>, Febbo, J.A. <sup>†</sup>, and **Roman, B.L.** The Development of a new zebrafish phospho-Smad1/5/8 reporter line to study BMP signaling *in vivo*. 9<sup>th</sup> International Zebrafish Development and Genetics, Madison, WI, June 2010.

31. Laux, D.W. <sup>††</sup>, Febbo, J.A. <sup>†</sup>, and **Roman, B.L.** Analysis of the role of phospho-Smad1/5/8-mediated transcriptional activation in zebrafish vascular development. (2011). 4<sup>th</sup> Strategic Conference of Zebrafish Investigators, Asilomar Conference Center, Pacific Grove, CA, January 2011.
32. Fujita, M., Cha, Y., Pham, V., Roman, B., and Weinstein, B. (2011). Cranial vessel formation in the developing zebrafish. *Developmental Biol.* **356 (1)**, 159. SDB Annual Meeting, Chicago, IL, July 2011.
33. Rochon, E.R. <sup>††</sup>, Schubert, M.M., and **Roman, B.L.** Identifying functionally relevant targets downstream of Alk1 signaling involved in AVM prevention. Mid-Atlantic Society for Developmental Biology, Penn State University, University Park, PA, May 2012.
34. Laux, D.W. <sup>††</sup>, Rochon, E.R., Young, S., and **Roman, B.L.** Identification of a novel blood flow-responsive signaling pathway involving Alk1 and pSmad1/5/9. 10<sup>th</sup> International Conference on Zebrafish Development and Genetics. Madison, WI, June 2012.
35. Rochon, E.R. <sup>††</sup>, Schubert, M.M., and **Roman, B.L.** Identifying functionally relevant targets downstream of Alk1 signaling involved in AVM prevention. 10<sup>th</sup> International Conference on Zebrafish Development and Genetics. Madison, WI, June 2012.
36. Rochon, E.R. <sup>††</sup>, Young, S., and **Roman, B.L.** Alk1 is required for directed cranial arterial endothelial cell migration. 11<sup>th</sup> International Conference on Zebrafish Development and Genetics, Madison, WI, June 2014.
37. Menon, P.G., Rochon, E.R. <sup>††</sup>, and **Roman, B.L.** In vivo cell tracking to quantify endothelial cell migration during zebrafish vascular development. SPIE Medical Imaging, San Diego, CA, March 2016.
38. Gau, D., Veon, W., Capasso, T.L. <sup>††</sup>, Joy, M.E, **Roman, B.**, Koes, D., and Roy, P. Small molecule mediated inhibitions of transcriptional cofactor MKL and its downstream target profilin impedes endothelial cell migration and angiogenesis. International Vascular Biology Meeting, Boston, MA, October 2016.
39. Gau, D., Veon, W., Capasso, T.L. <sup>††</sup>, Joy, M.E, **Roman, B.**, Koes, D., and Roy, P. Small molecule mediated inhibitions of transcriptional cofactor MKL and its downstream target profilin impedes endothelial cell migration and angiogenesis. ASCB, San Francisco, CA, December 2016.
40. Capasso, T.L. <sup>††</sup>, Li, B. and **Roman, B.L.** Alk1 ligands in zebrafish vascular development. Developmental Vascular Biology and Genetics Workshop VII, Asilomar Conference Center, Pacific Grove, CA, October 2017.
41. Treggiari, D. <sup>†††</sup>, Capasso, T.L., Hindes, M., Bloch, J.L., Cook, S., Trucco, S., and **Roman, B.L.** Investigating the role of BMP9 in development of superior cavopulmonary anastomosis-associated pulmonary arteriovenous malformations. Vascular Biology and Genetics Workshop VII, Asilomar Conference Center, Pacific Grove, CA, October 2017.
42. Li, B. <sup>††</sup>, Volek, H., Capasso, T.L. <sup>††</sup>, Kim, K., and **Roman, B.L.** Zebrafish *bmp10* mutants recapitulate hereditary hemorrhagic telangiectasia-associated high output heart failure. 13<sup>th</sup> International Zebrafish Conference, Madison, WI. June 2018.

## SERVICE

### 1. SERVICE TO SCHOOL AND UNIVERSITY

<b>1. Service to School and University</b>			
<b>Years</b>	<b>Institution, Department or Program</b>	<b>Committee</b>	<b>Position</b>
2003-2006	GUMC	Library committee	Member
2004-2006	GUMC	Graduate Advisory Committee	Member
2004-2006	GUMC, Cell Biology	Graduate Advisory Committee	Director of Graduate Studies
2007-2010	Pitt, Program in Integrative Molecular Biology	Admissions Committee	Member
2007-2009	Pitt, Biological Sciences	Retreat Committee	Co-chair
2008-2010	Pitt, Biological Sciences	Graduate Curriculum Committee	Chair
2008-2010	Pitt, Biological Sciences	Graduate Program Oversight Committee	Member
2010-2012	Pitt, Honors College	Honors College Advisory Board	Member
2010-2012	Pitt, Program in Integrative Molecular Biology	Admissions Committee	Vice Chair
2011-2012	Pitt, Biological Sciences	Faculty Search Committee	Member
2011-2014	Pitt, Biological Sciences/Neuroscience	Microscopy Committee	Co-chair
2011-2014	Pitt, Angiopathy Training Program (T32)	Recruitment Committee	Member
2012-2013	Pitt, Program in Integrative Molecular Biology	Admissions Committee	Chair
2012-2014	Pitt, Biological Sciences	Honors Committee	Member
2014-present	Pitt, Human Genetics	Curriculum Committee	Member

**1. Service to School and University**

<b>Years</b>	<b>Institution, Department or Program</b>	<b>Committee</b>	<b>Position</b>
2014-2017	Pitt, Integrative Systems Biology Program	Admissions Committee	Member
2015-present	Pitt, Human Genetics	Admissions Committee	Member
2015-present	Pitt, Human Genetics	Medical Scientist Training Program	Associate Program Director for Human Genetics
2015-present	UPMC/Pitt HHT Center of Excellence	Steering Committee	Center co-founder, Basic Research Director
2017-present	Pitt, Human Genetics	Dean's Day Poster Judging Committee	Member
2018-present	Pitt, Human Genetics	Research and Faculty Development Committee	Chair
2018-present	Pitt, Human Genetics	Laboratory Committee	Member

**2. SERVICE TO FIELD OF SCHOLARSHIP****2A. Editorial Boards, Editorships**

<b>Date</b>	<b>Position</b>	<b>Journal Title</b>
2011-present	Editorial board member	<i>Angiogenesis</i>

**2B. Manuscript and Other Document/Publication Review (by journal)**

<b>Date (#)</b>	<b>Journal Title</b>	<b>total # reviews</b>
2016 (1), 2017 (2) 2018 (1)	American Journal of Respiratory and Critical Care Medicine	4
2011 (2), 2012 (3), 2014 (2), 2015 (2), 2016 (1), 2017 (3), 2018 (3), 2019 (1)	Angiogenesis	17
2008 (1), 2009 (1), 2010 (1)	Blood	3

**2B. Manuscript and Other Document/Publication Review (by journal)**

<b>Date (#)</b>	<b>Journal Title</b>	<b>total # reviews</b>
2009 (1)	BMC Cell Biology	1
2019 (1)	BMC Dev Biol	1
2012 (1)	Cell and Molecular Life Sciences	1
2005 (1), 2010 (1), 2012 (3), 2014 (1)	Development	6
2009 (1), 2010 (2), 2011 (1)	Developmental Biology	4
2011 (1)	Developmental Cell	1
2011 (1)	Developmental Dynamics	1
2015 (1), 2018 (1)	Disease Models and Mechanisms	2
2019 (1)	eLIFE	1
2014 (1)	Frontiers in Genetics	1
2007 (1)	Gene Expression	1
2007 (1)	Gene Expression Patterns	1
2008 (1)	International Journal of Molecular Sciences	1
2017 (1)	Journal of Alzheimer's Disease Research	1
2013 (1)	Journal of Anatomy	1
2012 (1)	Journal of Cell Biology	1
2012 (1), 2013 (1)	Journal of Cellular Investigation	2
2006 (1)	Journal of Experimental Biology	1
2017 (1)	Journal of Medical Genetics	1
2016 (1)	Journal of Visualized Experimentation	1
2009 (1)	Mechanisms of Development	1
2014 (1)	Molecular Biology of the Cell	1
2017 (2)	Nature	2
2007 (1)	Nature Genetics	1

**2B. Manuscript and Other Document/Publication Review (by journal)**

<b>Date (#)</b>	<b>Journal Title</b>	<b>total # reviews</b>
2008 (2)	Nature Medicine	2
2011 (1), 2017 (1)	PLoS Biology	2
2019 (1)	PLoS Genetics	1
2013 (1)	PLoS One	1
2009 (1)	Prenatal Diagnosis	1
2016 (1)	Reproductive Toxicology	1
2016 (2), 2018 (1)	Scientific Reports	3
2016 (1)	Stem Cells	1
2011 (1)	Thrombosis and Hemostasis	1
2012 (1), 2013 (1), 2015 (1)	Toxicological Sciences	3
2009 (1)	Trends in Cardiovascular Medicine	1
2005 (1), 2006 (1)	Zebrafish	2
	<b>TOTAL MANUSCRIPTS REVIEWED</b>	<b>78</b>

**2C. Study Sections, Review Panels, Advisory Boards**

<b>Date</b>	<b>Position</b>	<b>Organization</b>
2002	Ad-hoc reviewer	Hematology-2 Study Section, NIH
2004	Ad-hoc reviewer	Cardiovascular Differentiation and Development Study Section, NIH
2007	Ad-hoc reviewer	Special Review Committee, P01 "Novel Targets in Thrombosis and Hemostasis," NIH
2008, 2009	Ad-hoc reviewer	Special Emphasis Panel, "Tools for Zebrafish Research," NIH
2009	Ad-hoc reviewer	Special Emphasis Panel, "Zebrafish Genetic Screens," NIH
2010	Ad-hoc reviewer	Special Emphasis Panel, "Lymphatic Biology in Health and Disease," NIH

2010	Ad-hoc reviewer	University of Milan, postdoctoral fellowship application
2010	Ad-hoc reviewer	Canada Foundation for Innovation, infrastructure application
2011	Ad-hoc reviewer	Medical Research Council UK, grant application
2012-present	Ad-hoc reviewer	Cardiovascular Development Peer Review Group, American Heart Association (7 sessions to date)
2016-2017	Ad-hoc reviewer	Central Research and Development Fund Small Grant Program, University of Pittsburgh (2 sessions)
2017	Ad-hoc reviewer	Cardiovascular Differentiation and Development Study Section, NIH
2017	Ad-hoc reviewer	Developmental Biology Subcommittee, NICHD, NIH
2017	Mail reviewer	Special Emphasis Panel, Perinatal Stroke, NIH
2018-present	Ad-hoc reviewer	CMRF review panel, Pitt School of Medicine (2 sessions to date)
2018	Ad-hoc reviewer	Research Council KU Leuven, Belgium, grant application
2018	Ad-hoc reviewer	Peer reviewed medical research program, pre-application phase, DOD
2018	Ad-hoc reviewer	SCORE program, NIH
2019	Ad-hoc reviewer	MOMRP IMR, DOD

## 2D. Leadership in Scholarly and Professional Organizations and Honorary Societies

Date	Position	Organization
2006	Session Chair	NIH Workshop, HHT Vascular Biology and Pathophysiology, Bethesda, MD
2011	Session Chair, Poster Judge	9 <sup>th</sup> International HHT Scientific and Medical Conference, Kemer, Turkey
2012	Session Chair	NAVBO Genetics and Genomics of Vascular Disease Workshop, Asilomar Conference Grounds, Pacific Grove, CA
2012-present	Pitt Representative	North American Vascular Biology Organization (NAVBO)

## 2D. Leadership in Scholarly and Professional Organizations and Honorary Societies

Date	Position	Organization
2013	Session Chair	10 <sup>th</sup> International HHT Scientific and Medical Conference, Cork, Ireland
2014-2015	Member, Organizing Committee; Workshop Leader	11 <sup>th</sup> International HHT Scientific and Medical Conference, Captiva Island, Florida
2017	Session Chair	NAVBO Developmental Vascular Biology Workshop, Asilomar Conference Grounds, Pacific Grove, CA
2018	Session Chair	13 <sup>th</sup> International Zebrafish Conference, Madison, WI
2018-2019	Chair, Organizing Committee; Workshop leader	13 <sup>th</sup> International HHT Scientific and Medical Conference, San Juan, Puerto Rico

### 3. SERVICE FOR PRACTICE AND POLICY-MAKING, INCLUDING CONSULTANTSHIPS

#### 3A. Non-governmental and Community-Based Organizations

Date	Position	Type of service/organization
2014-2015	Invited speaker/research expert, CureHHT	Participated in patient outreach and education in the Northeast US (New York, New Jersey). Not compensated.
2019-present	Member, North American Scientific and Medical Advisory Council, CureHHT	One of three basic scientists tasked with interfacing with clinicians and pharma in North America, to improve the lives of HHT patients.



## 4. NON-PROFESSIONAL SERVICE

4A. Non-professional service		
Date	Position and Organization	Type of Service
2010	Volunteer speaker	Videoconference with students in Advanced Placement Biology at Minnetonka High School, Minnetonka, Minnesota
2010	Research host	Hosted student from Saratoga Springs High School, Saratoga Springs, NY, for four-week summer research project. Student presented at The Siemens Competition in Math, Science and Technology; The Junior Science and Humanities Symposium (first place, sub-regional competition); and the Intel International Science and Engineering Fair.
2011	Volunteer, Falk Laboratory School, Pittsburgh, PA	Presentation to primary students, "Zebrafish as a model for human development and genetics."
2013	Discussion leader, University of Pittsburgh, Pittsburgh, PA	Informal science discussion with undergraduates in Health Sciences Living Learning Community.
2015	Volunteer, Falk Laboratory School, Pittsburgh, PA	Presentation to middle school students, "Genotype/phenotype correlations in zebrafish."
2016	Volunteer, Falk Laboratory School, Pittsburgh, PA	Expert advisor for 5 <sup>th</sup> grade students studying organ systems biology
2016-present	Volunteer scientist chaperone	Scientist chaperone for a patient with an undiagnosed condition that involves vascular malformations. I facilitate communication among the patient's vascular team and between the clinical/genetic team and the patient's family. I researched and recommended gene panels for clinical and research purposes, and met with the clinical team to convince them of the relevance of these panel and the importance of genetic testing. <i>To my knowledge, this is the first UPMC patient to have had somatic genetic testing for a vascular malformation.</i> I hope that this experience will pave the way for future patients.
2018-present	Event host, Carnegie Science Center, Pittsburgh, PA	Hosted 8 girls in my laboratory as part of the <i>Tour Your Future</i> series. The purpose of this program is to showcase women scientists and their work to girls interested in careers in STEM.
2019	Career panelist, Carnegie Science Center, Pittsburgh, PA	Discussed my career path with girls in grades 5-8, STEM Stars Saturday Academy, Carnegie Science Center.

