

**THE UNIVERSITY OF BRITISH COLUMBIA**  
*Curriculum Vitae for Faculty Members*

Date: 11 April 2017

Initials: SEC

1. **SURNAME:** Chang **FIRST NAME:** Stephanie  
**MIDDLE NAME(S):** Ei-Ling
  
2. **DEPARTMENT/SCHOOL:** School of Community and Regional Planning (SCARP) (67%)  
Institute for Resources, Environment, and Sustainability (IRES) (33%)
  
3. **FACULTY:** Applied Science (SCARP) and Science (IRES)
  
4. **PRESENT RANK:** Professor **SINCE:** July 2009
  
5. **POST-SECONDARY EDUCATION**

University or Institution	Degree	Subject Area	Dates
Cornell University	Ph.D.	Regional Science (minor fields: economics; civil engineering)	1994
Cornell University	M.S.	Regional Science	1993
Princeton University	B.S.E.	Civil Engineering and Operations Research	1989 (magna cum laude)

**Title of Dissertation and Name of Supervisor**

*Dissertation title:* Regional Infrastructure Investment: An Analysis of Capital Accumulation in the Built Physical Environment Disaggregated by Industry

*Supervisor:* Barclay G. Jones (deceased)

**Special Professional Qualifications**

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6. **EMPLOYMENT RECORD**

(a) *Prior to coming to UBC*

University, Company or Organization	Rank or Title	Dates
University of Washington, Department of Geography	Research assistant professor	1997 - 2003
ABS Consulting (engineering/risk consultants, formerly EQE International, Inc.), Irvine, CA & Seattle, WA	Project/Lead engineering economist	1994 - 2001

(b) *At UBC*

Rank or Title	Dates
Professor	July 2009 - present
Associate professor	July 2004 - June 2009
Assistant professor	Jan. - July 2004

(c) *Date of granting of tenure at U.B.C.:*

Tenure effective July 1, 2004.

## 7. LEAVES OF ABSENCE

Study leave: July 2010 - June 2011

Study leave: July 2015 - June 2016

## 8. TEACHING

### (a) *Areas of special interest and accomplishments*

Urban planning, geography and regional science; Natural disasters, risk analysis, and risk management; GIS decision-support systems; Quantitative analysis and computer modeling; Transportation and other urban infrastructure systems; U.S., Canada, Japan, New Zealand.

### (b) *Courses Taught at UBC* <sup>[1], [2], [3]</sup>

Session	Course Number	Scheduled Hours	Class Size	Hours Taught <sup>[4]</sup>			
				Lectures	Tutorials	Labs	Other (seminar)
2016-17W	PLAN 521	3 / wk	31	18		18	
2016-17W	PLAN 531	3 / wk	8				36
2016-17W	RES 502 (202)	3 / wk	6				36
2014-15W	PLAN 548h	3 / wk	15	6		6	
2014-15W	PLAN 548i	3 / wk	49	12			
2014-15W	PLAN 548k / RMES 500w	3 / wk	14				36
2014-15W	RMES 507	3 / wk	6				36
2013-14W	PLAN 548h	3 / wk	14	6		6	
2013-14W	PLAN 548i	3 / wk	33	6		6	
2013-14W	PLAN 548k / RMES 500x	3 / wk	14				36
2013-14W	RMES 507	3 / wk	12				36
2012-13W	PLAN 548h	3 / wk	10	6		6	
2012-13W	PLAN 548i	3 / wk	29	6		6	
2012-13W	PLAN 548k / RMES 500x	3 / wk	9				36 <sup>[5]</sup>
2011-12W	PLAN 548k / RMES 500x	3 / wk	13	36			
2011-12W	PLAN 514 / RMES 500h	3 / wk	10	18		18	
2009-10W	PLAN 548k / RMES 500x	3 / wk	16	36			
2009-10W	PLAN 514 / RMES 500h	3 / wk	13	18		18	
2008-09W	PLAN 548k / RMES 500x	3 / wk	9	36			
2008-09W	PLAN 511 / RMES 500a	3 / wk	28	18		18	
2007-08W	PLAN 548k / RMES 500x	3 / wk	15	36			
2007-08W	PLAN 511 / RMES 500a	3 / wk	25	18		18	
2006-07W	PLAN 548k / RMES 500x	3 / wk	8	36			
2006-07W	PLAN 511 / RMES 500a	3 / wk	24	18		18	
2006-07W	PLAN 514 / RMES 500h	3 / wk	10	36			
2005-06W	PLAN 548k / RMES 500x	3 / wk	6	36			
2005-06W	PLAN 511 / RMES 500a	3 / wk	29	18		18	
2005-06W	PLAN 514 / RMES 500h	3 / wk	9	36			
2005-06W	PLAN 548c	3 / wk	20				36 <sup>[6]</sup>
2004-05W	PLAN 548k / RMES 500x	3 / wk	8	36			
2004-05W	PLAN 515	3 / wk	32	24 <sup>[7]</sup>			

**Notes:** [1] All courses listed above are graduate-level courses.

- [2] In addition to the courses listed, I also was the instructor for several graduate students' **directed studies** courses: in 2004 (1 student), 2006 (2), 2007 (4), 2008 (1), 2009 (2), 2010 (2), 2011 (1), **2017 (1)**.
- [3] Prior to joining UBC, my teaching experience was limited to 2 undergraduate courses in the Geography Department at the University of Washington: GEOG 495 (Geography of Natural Hazards, Fall 2000, ~15 students) and GEOG 448 (Geography of Transportation, Fall 2001, ~30 students). These were sole-taught lecture courses with 3 contact hours per week.
- [4] All courses EXCEPT PLAN 548c (see note [6]) were individually taught, with no TA; hence 3 contact hours per week.
- [5] For PLAN 548k in 2012-13W, I was the nominal instructor but the course was primarily taught by someone else.
- [6] For PLAN 548c in 2005-06W, I was the nominal instructor but the course was primarily taught by someone else. The format was an intensive 2-week course in April.
- [7] Co-taught. I was the main instructor. My course lecture hours (24) are based on apportionment of total course hours (36).

### Concise Statement of Teaching Approach

At UBC, I have taught quantitative methods (PLAN 511, PLAN 514, PLAN 548H/I, PLAN 521) and interdisciplinary research design (RES 502), as well as my specialty area, planning for disaster-resilient communities (PLAN 531), and Human-Technological Systems (RMES 507). In the methods courses, I emphasize learning-by-doing, with a goal of developing practical skills. These include not only analytical and software skills, but also the ability to communicate results effectively. Students are assessed on the basis of short reports from a series of small projects involving real-world situations and data. I also emphasize developing a critical understanding of the strengths, limitations, and appropriate situations for using various types of data and methods. For example, textbook selections are always complemented by application readings. In my seminar courses, I emphasize developing an interdisciplinary, integrated understanding of interactions between the natural, built, and human environments. I usually include one major assignment where students gain experience working in small groups, simulating a multidisciplinary team setting.

#### (c) *Graduate Students Supervised and/or Co-Supervised*

(students listed in reverse chronological order of program start date)  
(CO= co-supervisor; CM= committee member)

#### 1) Students for whom I serve(d) as principal supervisor <sup>[1]</sup>

Student Name	Program Type	Year		Principal Supervisor	Co-Supervisor(s)
		Start	Finish		
Alexa Tanner	RES (Ph.D.)	2016		Stephanie Chang	
Emily Gray	SCARP (MCRP)	2015	2017*	Stephanie Chang	
Arielle Dalley	SCARP (MCRP)	2015	2017*	Stephanie Chang	
Sarah Marshall	SCARP (MCRP)	2015	2017*	Stephanie Chang	
Cher King-Scobie	SCARP (Ph.D.)	2014		Stephanie Chang	(CM) Michael Church, Mark Stevens
Michelle Marteleira	SCARP (M.A.P.)	2014	2017*	Stephanie Chang	-
Christopher Lee	SCARP (M.Sc.P.)	2013(2017) <sup>[2]</sup>		Stephanie Chang	
Bethany Dobson	SCARP (M.Sc.P.)	2013 <sup>[3]</sup>	2016	Stephanie Chang	-
Christopher Carter	SCARP (M.Sc.P.)	2013	2015	Stephanie Chang	-
Rebecca Chaster	SCARP (M.A.P.)	2013	2015	Stephanie Chang	-
Tugce Conger	RMES (Ph.D.)	2013 <sup>[4]</sup>		Stephanie Chang	(CM) Mark Johnson, Maged Senbel
Ashley Lowcock	SCARP (M.Sc.P.)	2012	2014	Stephanie Chang	-
Wei-Chung Chen	SCARP (M.Sc.P.)	2012	2014	Stephanie Chang	-
Zheng Ki (Jackie) Yip	RMES (Ph.D.)	2011 <sup>[5]</sup>		Stephanie Chang	(CM) Tim McDaniels, Karen Bartlett
Autumn Lotze	SCARP (M.A.P.)	2011	2014	Stephanie Chang	(CM) Mark Stevens
Josh Taylor	SCARP (M.A.P.)	2011	2013	Stephanie Chang	(CO) Ken Elwood
Daniel Martin	SCARP (M.A.P.)	2010	2012	Stephanie Chang	-
Marleen de Ruiter	RMES (M.A.)	2009	2011	Stephanie Chang	(CM) John Clague

Wendy Tse	SCARP (M.A.P.)	2009	2011	Stephanie Chang	-
Dilnoor Panjwani	SCARP (Ph.D.)	2008	2013	Stephanie Chang	(CM) Penny Gurstein, Nora Angeles, David Edgington
Lilia Yumagulova <sup>[5]</sup>	SCARP (Ph.D.)	2008 <sup>[6]</sup>		Stephanie Chang	(CM) Tim McDaniels, Mark Stevens
Heather Fehr	SCARP (M.A.P.)	2008	2010	Stephanie Chang	-
Karthick Pathman	SCARP (M.A.P.)	2007	2010	Stephanie Chang	(CM) Terje Haukaas
Martin Gregorian	SCARP (M.A.P.)	2007	2010	Stephanie Chang	-
Raj Dhariwal	RMES (M.Sc.)	2006	2009	Stephanie Chang	(CM) David Patrick
Erica Crawford Boettcher	SCARP (M.Sc.P.)	2006	2010	Stephanie Chang	(CM) Tony Dorcey
Jana Fox	SCARP (M.A.P.)	2006	2008	Stephanie Chang	-
Kristi Tatebe	SCARP (M.A.P.)	2005	2007	Stephanie Chang	-
Cathy Pasion	SCARP (M.Sc.P.)	2005	2007	Stephanie Chang	-
Darren Cole	SCARP (M.A.P.)	2003	2006	Stephanie Chang	(CM) Tim McDaniels

**Notes:** [1] Does not include first-year advisees (SCARP Master's students).

[2] I became Christopher Lee's supervisor in his 4th year, in January 2017.

[3] On person leave, 2014W Term 1.

[4] I became Tugce Conger's supervisor after her first year, in summer 2014.

[5] On personal leave, 2012~13 academic year.

[6] Lilia Yumagulova entered with a Trudeau Fellowship. She has been having health problems and took medical leave for several months in 2015 and 2016.

\* = students who will be finishing in April 2017.

## 2) Students for whom I serve(d) as co-supervisor

(other committee members not listed)

Student Name	Program Type	Year		Principal Supervisor	Co-Supervisor(s)
		Start	Finish		
Sarah Wilmot	SCARP (M.Sc.P.)	2005	2007	Tim McDaniels	Stephanie Chang
Etsuko Yasui	SCARP (Ph.D.)	1997 <sup>[1]</sup>	2007	Tony Dorcey	Stephanie Chang

**Note:** [1] I joined Etsuko Yasui's committee in 2005. When her supervisor, Tony Dorcey, was on sabbatical in 2006 (Jan-Dec) and thereafter to completion, I worked closely with her as co-supervisor.

## 3) Students for whom I serve(d) as committee member

(other committee members not listed)

Student Name	Program Type	Year		Principal Supervisor	Committee Member
		Start	Finish		
Lucy Rodina	RMES (Ph.D.)	2013		Leila Harris	Stephanie Chang
Rodrigo Costa	Civil Engineering (Ph.D.)	2015		Terje Haukaas	Stephanie Chang
Adriana Keating	Geography, Vienna Univ. of Econ. & Bus. (Ph.D.)	2013		Sigrid Stagl	Stephanie Chang
Allanah Brown	Civil Engineering (M.Sc.)	2014	2016	Terje Haukaas	Stephanie Chang
Frederic Marquis	Civil Engineering (M.Sc.)	2013	2015	Ken Elwood	Stephanie Chang
Jenna Kim	Civil Engineering (M.Sc.)	2013	2015	Ken Elwood	Stephanie Chang
Lee Haber	SCARP (M.Sc.P.)	2012	2015	Larry Frank	Stephanie Chang
Kumudu Jayaratne	Architecture (MASA)	2011	2013	Ray Cole	Stephanie Chang
Jennifer Pinette	SCARP (M.A.P.)	2010	2012	Tim McDaniels	Stephanie Chang
Yuko Okamura	Architecture (M.Arch.)	2010	2012	Inge Roecker	Stephanie Chang
Nathan Vadeboncoeur	RMES (Ph.D.)	2009	2014	Ralph Matthews	Stephanie Chang
Nick Roberts	Earth Sciences (Ph.D.), Simon	2007	2016 <sup>[1]</sup>	John Clague	Stephanie Chang

	Fraser University (SFU)				
Andrew Devlin	RMES (M.A.)	2007	2009	Larry Frank	Stephanie Chang
Gerard Chew	RMES (Ph.D.)	2006	DNF	Tim McDaniels	Stephanie Chang
William Johnstone	Civil Engineering (Ph.D.)	2006	2012	Barbara Lence	Stephanie Chang
Marit Heideman	Earth Sciences (Ph.D.), SFU	2005	2013	John Clague	Stephanie Chang
Mark Seemann	Geography (Ph.D.), University of Victoria	2005	2013 <sup>[2]</sup>	Denise Cloutier-Fisher (formerly, Harold Foster)	Stephanie Chang
Ugo Lachapelle	SCARP (Ph.D.)	2005	2010	Larry Frank	Stephanie Chang
Jennifer Niece	SCARP (M.A.P.)	2004	2006	Larry Frank	Stephanie Chang
Chris Hawkins	SCARP (M.A.P.)	2004	2007	Larry Frank	Stephanie Chang
Meidad Kissinger	SCARP (Ph.D.)	2003	2008	Bill Rees	Stephanie Chang

**Notes:** [1] I was on Nick Roberts's committee through the dissertation writing phase.

[2] I was on Mark Seemann's committee through the prospectus defense phase.

#### 4) Students co-supervised prior to my joining UBC

At the University of Washington, as a research faculty member, I was not allowed to formally supervise graduate students. I did, however, join two students' committees and played a major role in their supervision. For Walter Svekla (M.S., 2000), I was the de facto supervisor. For Scott Miles (Ph.D., 2004), I was co-supervisor with equally shared responsibility. The nominal supervisor in both cases was Prof. Tim Nyerges.

#### 5) Current positions of former graduate students (where known)

##### *Supervised or co-supervised:*

- Dilnoor Panjwani (Ph.D.) – research associate, United Nations Development Program
- Scott Miles (Ph.D.) – associate professor, Dept. of Environmental Studies, Western Washington University
- Etsuko Yasui (Ph.D.) – assistant professor, Applied Disaster and Emergency Studies, Brandon University
- Bethany Dobson (M.Sc.P.) – transportation planner, Bunt and Associates, Vancouver
- Rebecca Chaster (M.A.P.) – planning technician, City of Surrey
- Josh Taylor (M.A.P.) – Catalyst non-profit real estate developer
- Wendy Tse (M.A.P.) – planner, City of North Vancouver
- Marleen de Ruiter (M.Sc.) – emergency management specialist, BGH Consulting
- Erica Crawford Boettcher (M.A.P.) – research associate, BC Agriculture Climate Action Initiative, Victoria
- Heather Fehr (M.A.P.) – Canadian Institute for Planners
- Karthick Pathman (M.A.P.) – Pan American Health Organization / World Health Organization, Barbados (CIDA internship), emergency preparedness and disaster relief office
- Raj Dhariwal (M.A.) – emergency preparedness manager, BC Hydro, Vancouver
- Jana Fox (M.A.P.) – planner, City of Beaverton, Oregon
- Cathy Pasion (M.Sc.P.) – planner, City of New York
- Kristi Tatebe (M.A.P.) – planner, SmartGrowth BC, Vancouver

##### *Committee member:*

- Meidad Kissinger (Ph.D.) – assistant professor, Geog. & Environmental Studies, Ben-Gurion University, Israel

#### 6) Research assistants supervised

- At UBC, I have supervised or co-supervised 56 graduate research assistants, including many of the students listed in the advisees tables above. **[10 RAs in current reporting period]**
- At the University of Washington, I supervised 17 graduate and undergraduate research assistants.

- I have supervised 4 **postdoctoral fellows**: Shona van Zijll de Jong, Greg Oulahan, Nicole Errett, and Brennan Vogel, all funded by my research grants. [3 postdocs in current reporting period]

(d) *Continuing Education Activities*

(e) *Visiting Lecturer (indicate university/organization and dates)*

(f) *Other*

- **Directed Studies** courses: (Year – student)
  - 2017 – Christopher Lee
  - 2011 – Jamie Williams
  - 2010 – Jessica Shoubridge, Robin Mills
  - 2009 – Karthick Pathman, Heather Fehr
  - 2008 – Renee Coull
  - 2007 – David Hawkins, Erica Crawford Boettcher, Jana Fox, Lang Lang
  - 2006 – Colleen Brown
  - 2004 – Darren Cole, Sanjay Coehlo
- Faculty supervisor for 11 student **internship** courses, 2004~present. [0 in current reporting period]
- Faculty supervisor for 2 MITACS student internships (Daniel Martin, Meredith Seeton), 2012
- "On Planning for Disasters," workshop at Ph.D. Jamboree, SCARP, June 2007.
- Presentation at IRES student career seminar, 2007

## 9. SCHOLARLY AND PROFESSIONAL ACTIVITIES

(a) *Areas of special interest and accomplishments*

My work has contributed to scholarship in the hazards and disaster social sciences in three main ways. First, I have developed new empirically-based knowledge on the socio-economic impacts of disasters, especially in the areas of infrastructure failure impacts, economic impacts, spatial disparities, recovery, and community resilience. These contributions include not only empirical insights but also quantitative measurement tools for conducting systematic, comparative analysis. Second, I have developed integrated computer simulation models for anticipating socio-economic impacts and recovery trajectories from potential future disasters. These models are innovative in their interdisciplinary integration of the physical and societal factors that contribute to natural hazard risk. Third, I have applied these models to assess risk reduction alternatives, including priorities for pre-disaster mitigation and post-disaster reconstruction. I believe that appropriate criteria for assessing my contributions include: originality, interdisciplinarity, and applicability to real-world problems.

(b) *Research or equivalent grants (indicate under COMP whether grants were obtained competitively (C) or non-competitively (NC))*

### **Notes:**

[1] All awards listed as NC (non-competitively obtained) were peer-reviewed awards resulting from internal research center competitions (i.e., not from open requests for proposals).

[2] Amounts are in Canadian dollars. U.S. dollar grant amounts are converted using exchange rates current at the time of the award. All amounts are annual.

[3] \*= effective years, including no-cost extension (\$/year calculated based on duration of unextended award).

[4] After moving to UBC, I could no longer be a PI on U.S. National Science Foundation grants, but I could be co-PI.

**Granting Agency acronyms:**

EDA = Economic Development Agency;

INFC = Infrastructure Canada

NCEER = National Center for Earthquake Engineering Research;

NSERC = Natural Sciences and Engineering Research Council;

NSF = U.S. National Science Foundation;

MCEER = Multi-disciplinary Center for Earthquake Engineering Research;

PEER = Pacific Earthquake Engineering Research Center;

PICS = Pacific Institute for Climate Solutions

SSHRC = Social Sciences and Humanities Research Council;

Granting Agency	Subject	COMP [1]	\$ Per Year [2]	Year [3]	Principal Investigator	Co-Investigator(s)
PICS	Spatially Explicit Coastal Flood Impact Scenarios for Sea-Level Rise Adaptation	C	\$21,000	2017-2020	S. Chang	
PICS	Green Infrastructure for Coastal Resilience to Storm Flooding and Sea Level Rise in the Salish Sea	C	\$21,000	2015-2018	S. Chang	
PICS	Post-Disaster Land Use Change As a Strategy for Climate Adaptation	C	\$18,000	2014-2017	S. Chang	
MEOPAR NCE	Response Core	NC	\$42,000	2016-2017	S. Chang	
MEOPAR NCE	Maritime Transport Disruption: An Integrated Assessment for Coastal Community Resilience	C	\$113,000	2014-2017 (ext. to 2018)	S. Chang	H. Dowlatabadi, T. Haukaas
NCE	Marine Environmental Observation, Prediction, and Response (MEOPAR) Network of Centres of Excellence	C	\$5 million	2012-2017	D. Wallace	S. Chang and 38 others
	-- initial projects (S. Chang portion)		\$57,100	2016-2017	S. Chang	
	-- initial projects (S. Chang portion)		\$87,050	2015-2016	S. Chang	
	-- initial projects (S. Chang portion)		\$76,200	2012-2015	S. Chang	
UBC, VP research & int'l	Post-Earthquake Data Collection Workshop	C	\$7,500	2013-2014	K. Elwood	S. Chang
UBC Martha Piper Fund	Learning from Christchurch: Technical Decisions and Societal Consequences in Post-Earthquake Recovery	C	\$16,667	2011-2013	S. Chang	K. Elwood
Japan Foundation	Reconstruction After Japan's Triple Disaster: Lessons for British Columbia	C	\$30,200	2011-2012	D. Edgington	S. Chang and 2 others
NSERC	Strategic Network Grant: Reducing Urban Seismic Risk	C	\$1 million	2008~2013	D. Mitchell	S. Chang and 24 others
NSF (US) [4]	New Methods for Measuring, Monitoring, and Evaluating Post-Disaster Recovery	C	\$154,000	2008-2011*	R. Eguchi	S. Chang and 3 others
SSHRC	Systems under Stress: An Investigation of Community Resilience to Natural Disasters	C	\$21,667	2007-2011*	S. Chang	
NSERC	Evaluation and Comparison of Risk and Performance Reliability for Infrastructure under Multiple Hazards	C	\$101,833	2007-2009	T. Haukaas	K. Elwood, S. Chang, R. Foschi
INFC	Analyzing Infrastructures for Disaster-Resilient Communities	C	\$94,550	2007-2009	T. McDaniels	S. Chang
NSF (US) [4]	The role of coastal ecosystem degradation in tsunami damage	C	\$114,000	2005-2006	P. Berke, U. North Carolina at Chapel Hill	S.E. Chang and 3 others
NSF (US) [4]	Mitigation of extreme event risks: the	C	\$171,200	2003-2008*	D. Reed, U.	S.E. Chang, T.

	case of electric power				Washington (S.Chang at time of award, before moving to UBC)	McDaniels
PEER (US)	GIS Modeling of the University Campus	NC	\$42,000	2002-2004	S.E. Chang	
MCEER (US)	Direct Losses, Social Impacts, and Community Resilience – Los Angeles Lifeline Study	NC	\$50,380	2002-2007	S.E. Chang	
MCEER (US)	Comprehensive Community Recovery Modeling	NC	\$42,140	2002-2007	S.E. Chang	
NSF (US)	Household Impacts of the Nisqually Earthquake	C	\$85,200	2001-2002	W. Beyers, U. Washington	S.E. Chang
EDA (US)	Business Vulnerability to Transportation Disruption in Earthquake Disasters	NC	\$42,000	2001-2003	W. Beyers	S.E. Chang
MCEER (US)	Computer Simulation and Fragility Information Dvpt.	NC	\$4,200	2000-2002	S.E. Chang	
MCEER (US)	Recovery Management	NC	\$32,400	2000-2003*	S.E. Chang	
PEER (US)	Assessing the Benefits and Costs of Performance-Based Earthquake Engineering	NC	\$76,500	1999-2003	R. Zerbe	S.E. Chang
NSF (US)	User Costs in Seismic Risk Management for Urban Infrastructure Systems	C	\$79,600	1998-2002*	S.E. Chang	D.B. Ballantyne, A.Z. Rose
NSF (US)	Earthquake Disaster Mitigation for Urban Transportation Systems	C	\$53,200	1998-2002*	S.E. Chang	
MCEER (US)	Loss Estimation Methodologies	NC	\$57,840	1997-2003*	S.E. Chang	
MCEER (US)	Memphis Lifeline Systems Analysis	NC	\$39,600	1997-2003*	S.E. Chang	
NSF (US)	Estimating the Economic Impact of Catastrophic Urban Earthquakes	C	\$72,800	1996-1999	S.E. Chang	
NSF (US)	Economic Impact of Lifeline Disruption in the 1995 Hyogoken Nanbu Earthquake	C	\$60,000	1995-1996	S.E. Chang	R.T. Eguchi
NCEER (US)	Sampling Procedure for Estimating Early Post-Earthquake Damage Losses to Building Stocks	NC	\$24,000	1994-1997*	R.T. Eguchi	S.E. Chang
NCEER (US)	Economic Loss Estimation	NC	\$51,000	1994-1997*	R.T. Eguchi	S.E. Chang

(c) *Research or equivalent contracts (indicate under COMP whether grants were obtained competitively (C) or non-competitively (NC)).*

Granting Agency	Subject	COMP [1]	\$ Per Year [2]	Year [3]	Principal Investigator	Co-Investigator(s)
Vancouver Economic Commission	Possible Impacts and Risks to City of Vancouver Associated with Increased Oil Tanker Traffic	NC	\$15,000	2013	S. Chang	M. Quayle

(d) *Invited Presentations*

Invited panelist, Urban Resilience in Metro Vancouver workshop, organized by TU-Dortmund and SFU, Vancouver (March 2017)



- "Resilience in the Tsunami Zone: Focus on Infrastructure and Economic Recovery," invited presentation at EERI Annual Meeting, Portland, OR (March 2017)
- "Urban Disaster Resilience," invited presentation, MPPGA Policy Salon, Liu Institute, UBC (September 2016)
- "Incorporating Recovery into Economic Analysis of Disasters," invited presentation, Politecnico di Torino, Turin, Italy (April 2016)
- "Modeling Societal Impacts of Earthquakes: Progress and Challenges," invited presentation, Tsukuba Global Science Week, Tsukuba, Japan (September 2015)
- "What Happens to Communities in Earthquakes?" invited presentation, Emergency Preparedness fair, Delta, BC (May 2015)
- "Incorporating Recovery into Economic Analysis," invited presentation, U.S. National Institute for Standards and Technology (NIST)/ASCE/ASME workshop on Economics of Community Disaster Resilience, Reston, VA (April 2015)
- "Dynamics of Urban Seismic Risk," invited presentation, Institute for Catastrophic Loss Reduction (ICLR) Friday Forum, Toronto, ON (April 2015)
- "Earthquake Resilience from a Practical Perspective," invited panel presentation, EERI UBC chapter workshop, Vancouver (October 2014)
- "What Happens to Communities in Earthquakes?" invited presentation, Township of Langley, Langley, BC (May 2014)
- "MEOPAR Research Directions and Opportunities," invited presentation to Marine Emergency Response Coordination Committee, Burnaby, BC (September 2013)
- "Earthquake Risk to Ports and Urban Economies," invited presentation to executive leadership team, Port Metro Vancouver, Vancouver, BC (March 2013)
- "Disaster Resilience Planning: The Business Sector in District of North Vancouver," invited presentation to District of North Vancouver (DNV), Natural Hazards Task Force, DNV, BC (March 2013)
- "Business Interruption and Economic Impact of Significant Earthquakes," invited presentation, City of Vancouver and Vancouver Board of Trade workshop on *Living with Earthquake Risk: Economic Impacts and Opportunities in the City of Vancouver*, Vancouver, BC (January 2013)
- "Density and Disaster Risk," invited presentation, *Vancouver Urban Forum*, Vancouver, BC (June 2012)
- "What Happens to Cities in Disasters?" invited presentation, Regional Emergency Preparedness Committee, New Westminster, BC (January 2012)
- "What Happens to Cities in Disasters?" invited presentation, Translink planning workshop (November 2011)
- "What Happens to Cities in Disasters?" invited presentation, UBC ShakeOut public event (October 2011)
- "Urban Growth and Long-Term Changes in Natural Hazard Risk: Implications for Insurance," invited presentation, 12th Biennial Aon Benfield Hazards Conference, Gold Coast, Australia (September 2011)
- "Dynamics of Urban Seismic Risk," invited presentation, Global Earthquake Model (GEM) Outreach Meeting, Beijing, China (June 2011)
- "Dynamics of Urban Seismic Risk," 2011 EERI Distinguished Lecture (April~December 2011): St. Louis, MO; Georgia Tech; Univ. at Buffalo; Penn State Univ.; Univ. of Michigan; Purdue U.; U. Illinois at Urbana-Champaign; and Vancouver, BC
- "Dynamics of Urban Seismic Risk," 2011 Distinguished Lecture, Earthquake Engineering Research Institute (EERI) annual meeting, San Diego, California, February 2011.
- "Towards a Theory of Economic Recovery from Disasters," invited presentation, Theory of Recovery Workshop, University of North Carolina, Chapel Hill, November 2010.
- "Regional Infrastructure Resilience in Floods and Earthquakes: A Scenario-Based Approach," invited presentation to New Zealand Society for Risk Management, Christchurch, New Zealand, August 2010.
- "Economics of Lifeline Resilience to Disasters," invited presentation to National Engineering Lifelines Committee (NELC+), Wellington, New Zealand, August 2010.
- "Economic Impact of Natural Disasters," invited presentation to government officials, Wellington, New Zealand, August 2010.
- "Anticipating Cascading Consequences of Infrastructure Failures in Disasters," keynote presentation, 4th Australasian Natural Hazards Management Conference, Wellington, New Zealand, August 2010.
- Panel presentation (invited), panel on Urban Vulnerability, 35th Natural Hazards Conference, Broomfield, Colorado, July 2010.

- "Analyzing Infrastructures for Disaster-Resilient Communities," invited presentation to Regional Emergency Preparedness Committee (Greater Vancouver), Vancouver, December 2009.
- "Infrastructure Resilience to Disasters," invited presentation, U.S. National Academy of Engineering, Frontiers of Engineering Symposium, Irvine, CA, September 2009.
- "Cascading Disasters: How Disasters Unfold," invited keynote presentation, U.S. National Academies' Disasters Roundtable Workshop 24, Irvine, Calif., February 2009.
- "The Sichuan Earthquake and Burmese Cyclone: A Perspective from Research on Disasters," invited presentation, UBC Institute for Asian Research forum, May 2008.
- "Communicating and Reducing Risk from Critical Infrastructure Interdependencies," invited presentation, 2008 National Earthquake Conference, Seattle, April 2008.
- "Fostering Disaster Resilience through Addressing Infrastructure Interdependencies," keynote presentation, Emerald Links seminar/workshop sponsored by Public Safety Canada, April 2007.
- "Recovery after a Major Earthquake: New Tools for Disaster Recovery Planning," invited presentation, 59th Annual Meeting of the Earthquake Engineering Research Institute, Los Angeles, February 2007.
- "Linking Lifeline Systems and Community Resilience," invited presentation, MCEER Annual Meeting, Washington, DC, June 2006.
- "Planning Tools for Urban Disaster Resilience," invited presentation, World Planners Congress, Vancouver, June 2006.
- "How Urban Systems Recover from Disasters," conference on Disaster Impacts: Ecological and Social Perspectives on Resilience, Providence, RI (USA), March 2006.
- "Infrastructure, Interdependencies, and Community Disaster Resilience," invited presentation at 18th Annual Emergency Preparedness Conference, Vancouver, October 2005.
- "Reducing Societal Impacts of Natural Disasters," invited presentation to UBC Faculty of Graduate Studies Advisory Council, UBC, April 2005.
- "Global Calamity, Global Response: The Tsunami in Southern Asia," panel discussion member, Liu Institute for Global Studies, UBC, January 2005.
- "Critical Infrastructures and Community Disaster Resilience," invited presentation at 1st Annual Canadian Risk and Hazards Network Symposium, Winnipeg, November 2004.
- "Interactive Simulation Model of Urban Disaster Recovery," invited presentation at Partners in Emergency Preparedness 2004 conference, Bellevue, Washington, April 2004.
- "Developments in Earthquake Engineering and Science Since the Northridge Earthquake: Social Sciences," invited presentation at annual meeting of Earthquake Engineering Research Institute, Los Angeles, February 2004.
- "Business Vulnerability to Airport Closures," invited presentation at Emergency Preparedness Conference, Vancouver, B.C., October 2003.
- "Evaluating Disaster Mitigations: Case Study of the Portland Water System," invited presentation to the Oregon Seismic Safety Policy Advisory Committee, September 2003.
- "Evaluating Disaster Mitigations: A Methodology for Urban Infrastructure Systems," invited presentation at the 2003 Annual Meeting of the Earthquake Engineering Research Institute, February 2003.

(e) *Other Presentations*

- "Infrastructure Risk and Resilience: Role of Research," presentation at Understanding Risk: From Knowledge to Action (UR+) Symposium, Vancouver (March 2017)
- "Sharing Resilience Knowledge among Coastal Communities: Resilient-C Online Platform," presentation at MEOPAR Annual Scientific Meeting, Ottawa (September 2016)
- "Sharing Resilience Knowledge among Coastal Communities," presentation at SCARP Research Conversations (September 2016)
- "Resilience of Coastal Communities to Disasters," presentation at VU University, Institute for Environmental Studies, Amsterdam, Netherlands (June 2016)
- "Resilience at the Community Scale," presentation at Risk and Resilience seminar, IIASA, Laxenburg, Austria (May 2016)

- "Disaster Risk and Resilience at the Urban Scale," presentation at Risk, Policy and Vulnerability seminar, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria (September 2015)
- "Assessing Socioeconomic Vulnerability in MEOPAR Research," presentation at Understanding and Assessing Social Vulnerability: A Collaborative Workshop, Vancouver, BC (February 2015)
- "Economic Impacts of Marine Transportation in Disasters," presentation at Emergency Preparedness and Business Continuity conference, Vancouver, BC (November 2014)
- "Assessing Socioeconomic Vulnerability in MEOPAR Research," presentation at Understanding and Assessing Social Vulnerability: A Collaborative Workshop, Vancouver, BC (February 2015)
- "Economic Impacts of Marine Transportation in Disasters," presentation at Emergency Preparedness and Business Continuity conference, Vancouver, BC (November 2014)
- "Canterbury Earthquakes – Lessons for North America: Recovery Management and Resilience," panel presentation at 10<sup>th</sup> National Conference on Earthquake Engineering, Anchorage, AK (July 2014)
- "Infrastructure Contribution to Business Disruption in Earthquakes: Model and Application to North Vancouver, Canada," presentation at 10<sup>th</sup> National Conference on Earthquake Engineering, Anchorage, AK (July 2014)
- "Strait of Georgia Risk Indicators and Impact Scenarios," presentation at MEOPAR Annual Scientific Meeting, Halifax, NS (June 2014)
- "Indicators of Communities' Vulnerability to Natural and Other Marine Hazards," presentation at Coastal Zone Canada Conference, Halifax, NS (June 2014)
- "Reducing Disaster Vulnerability of Coastal Communities on the Salish Sea," presentation at Salish Sea Ecosystem Conference, Seattle, WA (May 2014)
- "DNV Loss Estimation and Business Continuity Impacts," presentation at Geoscience Australia – Geological Survey of Canada Meeting, Vancouver, BC (July 2013)
- "Socioeconomic Impact of Marine Disasters," presentation at MEOPAR Strait of Georgia Marine Hazards Workshop, Vancouver, BC (June 2013)
- "The Christchurch Earthquake: Implications for Disaster Preparedness Planning in British Columbia," panel presentation at 9<sup>th</sup> Canadian Risk and Hazards Network (CRHNet) Symposium, Vancouver, BC (with K. Elwood and J. Taylor) (October 2012)
- "Modeling Potential Economic Loss to Businesses in Metro Vancouver from Seismic Events," presentation at 9<sup>th</sup> CRHNet Symposium, Vancouver, BC (October 2012)
- "Economic Impacts and Recovery in the Great East Japan Earthquake Disaster," presentation at Workshop on Reconstruction after Japan's Triple Disaster, Vancouver, BC (March 2012)
- "Resilience to Coastal Disasters," presentation at 2012 Annual Meeting of the American Association for the Advancement of Science (AAAS), Vancouver, BC (February 2012)
- "Measuring Recovery in Post-Hurricane Florida, USA," International Society for International Disaster Risk Management (IDRIM) conference, Los Angeles. (July 2011)
- "Modeling Socio-Economic Impacts of Earthquake Disasters," seminar presentation, Chiba University, Japan, January 2011.
- "Modeling Socio-Economic Impacts of Earthquake Disasters," seminar presentation, Disaster Prevention Research Institute, Kyoto University, Japan, March 2011.
- "Disaster Risk and Resilience Studies at the University of British Columbia," seminar presentation, Graduate School of Global Environmental Studies, Kyoto University, Japan, March 2011.
- "Dynamics of Urban Seismic Risk," seminar presentation, Disaster Prevention Research Institute, Kyoto University, Japan, March 2011.
- "Fall 2006 Boil-Water Advisory: Effect on Businesses," presentation to Greater Vancouver Regional District, May 2007.
- "Resilience of Human-Environmental Systems to Natural Disasters," IRES seminar presentation, March 2007.
- "Modeling Urban Disaster Recovery," presentation at 53rd North American meetings of the Regional Science Association International, Toronto, November 2006.
- "Linking Infrastructure Performance in Disasters, Stakeholder Expectations, and Community Resilience," presentation at 3rd Canadian Risk and Hazards Network Symposium, Montreal, October 2006.
- "Coastal Ecosystems and Communities in the 2004 Indian Ocean Tsunami," seminar presentation, School of Community and Regional Planning, UBC, February 2006.

- "Modeling Earthquake Loss to Regional Economies: The Case of Lifeline Infrastructure Systems," seminar presentation, Dept. of Civil Engineering, UBC, January 2006.
- "Performance Objectives and Social Impacts of Water and Power Outage," workshop presentation, joint Los Angeles Department of Water and Power (LADWP) and Multidisciplinary Center for Earthquake Engineering (MCEER) Workshop, Los Angeles, December 2005.
- "Reducing Risk Through Identifying Critical Infrastructure Interdependencies," presentation at 2nd Canadian Risk and Hazards Network Symposium, Toronto, November 2005.
- "Critical Infrastructure Interdependencies," seminar presentation, Joint Infrastructure Interdependencies Research Project, Univ. of British Columbia, October 2005.
- "Coastal Ecosystem Degradation and Tsunami Damage," presentation at U.S. National Science Foundation grantees' meeting, Human and Social Dynamics program, Washington, D.C., September 2005.
- "Towards Agent-Based Modeling of Infrastructure Impacts in Disasters," 51st North American Meetings of the Regional Science Association International, Seattle, November 2004.
- "Transportation Planning for Natural Disasters: An Accessibility Approach," colloquium presentation, Department of Geography, University of Washington, May 2003.
- "Economic Impacts of the Nisqually Earthquake on Households in the Puget Sound Region," Paper presented at the 49th North American Meetings of the Regional Science Association International, San Juan, Puerto Rico, November 2002. (with W. Beyers)
- "Estimating the Economic Impact of the Nisqually Earthquake on Businesses in the Central Puget Sound Region: A Focus on Transportation-Related Impacts," Presentation at the 49th North American Meetings of the Regional Science Association International, San Juan, Puerto Rico, November 2002. (with W. Beyers)
- "Building Performance in Earthquakes: Functionality and Economic Impact," 2003 Annual Meeting of the Pacific Earthquake Engineering Research Center, March 2003.
- "Disaster Vulnerability of Businesses in the 2001 Nisqually Earthquake," 2002 Annual Meeting of the Association of American Geographers, Los Angeles, California, March 2002. (with A. Falit-Baiamonte)
- "Economic Impact on Businesses of Earthquakes in the Lower Mainland," EPICC Forum 2002: Disaster Management for Industry and Commerce, Burnaby, British Columbia, Canada, 2002.
- "Impacts on Businesses and Business Districts of the Nisqually Earthquake," The Business of Earthquakes, conference by Cascadia Region Earthquake Workgroup, Seattle, Washington, 2001.
- "Transportation Equity: The Case of Disaster Planning," 48th North American Meetings of the Regional Science Association International, Charleston, S.Carolina, 2001.
- "Response and Socioeconomic Issues," Washington Earthquake of February 28, 2001: Reconnaissance and Recovery, EERI Technical Seminar, Vancouver, BC, Canada, October 2001.
- "Preparing for the Big One," colloquium presentation, Department of Geography, University of Washington, October 2001.
- "Earthquake Disaster Mitigation for Urban Transportation Systems," 26th Annual Hazards Research and Applications Workshop, Boulder, Colorado, 2001.
- "Port-to-Port Transportation Corridor Seismic Vulnerability Mitigation: Project Impact of King and Pierce Counties," invited presentation to the Disaster Resistant University working group, University of Washington, 2001.
- "Economic Recovery from Disasters," invited presentation at the Regional Strategic Recovery Planning Workshop (Washoe County Emergency Management Planning Task Force), Reno, Nevada, 2001.
- "Damage and Economic Impact in the Nisqually Earthquake," colloquium presentation, Department of Geography, University of Washington, 2001.
- "An Accessibility-Based Transportation Performance Measure for Disasters," 47th North American Meetings of the Regional Science Association International, Chicago, 2000.
- "Transportation Performance, Disaster Vulnerability, and Long-Term Effects of Earthquakes," Second EuroConference on Global Change and Catastrophe Risk Management: Earthquake Risks in Europe, Laxenburg, Austria, 2000.
- "Toward Integrated Models of Earthquake Economic Impacts: The Direct Loss Link," 46th North American Meetings of the Regional Science Association Int'l (RSAI), Montreal, Canada, 1999.
- "Spatial Disparities in Urban Disaster Recovery Following the Kobe Earthquake," 95th Annual Meeting of the Association of American Geographers, Honolulu, Hawaii, 1999.

- "Socio-Economic Performance of Urban Infrastructure Systems in the Earthquake Context," Disaster Prevention Research Institute, Kyoto University, Kyoto, Japan, 1999.
- "Preliminary Comparisons Between the Turkey and Taiwan Earthquakes," in seminar on "Earthquake in Turkey: The Aftermath," Jackson School of International Studies, Univ. of Washington, 1999.
- "Long-term Economic Impact of Port Damage in the 1995 Great Hanshin (Kobe) Earthquake," 45th North American Meetings of the Regional Science Association Int'l (RSAI), Santa Fe, N.M., 1998.
- "Natural Disasters and the Urban Economy: The 1994 Northridge and 1995 Great Hanshin (Kobe) Earthquakes," Geophysics seminar series, Univ. of Washington, 1998.
- "Comprehensive Evaluation of the Regional Economic Impact of Earthquake Disasters," 44th North American Meetings of the RSAI, Buffalo, N.Y., 1997.
- "Ports and the Regional Economy: A Framework for Evaluating the Consequences of Earthquake Damage," Ports and Harbors Research Institute, Yokosuka, Japan, 1997.
- "Regional Economic Impact of the January 17, 1995 Kobe, Japan, Earthquake," 43rd North American Meetings of the RSAI, Washington, D.C., 1996.
- "Building Stock Age Distribution and Urban Seismic Risk Assessment," 42nd North American Meetings of the RSAI, Niagara Falls, Ontario, Canada, 1995.

(f) *Other*

(g) *Conference Participation (Organizer, Keynote Speaker, etc.)*

- Organizer for session on "Infrastructure Risk and Resilience," Understanding Risk: From Knowledge to Action (UR+) Symposium, Vancouver (March 2017)
- Organizer, 4th annual MEOPAR West Coast Stakeholders' Workshop, Vancouver (December 2016)
- "Modeling Societal Impacts of Earthquakes," keynote presentation, 11th Canadian Conference on Earthquake Engineering (11CCEE), Victoria, BC (July 2015)
- Technical committee member, 11CCEE.
- Organizer, 3rd annual MEOPAR West Coast Stakeholders' Workshop, Vancouver (June 2015)
- Organizer, 2nd annual MEOPAR West Coast Stakeholders' Workshop, Vancouver (June 2014)
- Organizer, 1st annual MEOPAR West Coast Stakeholders' Workshop, Vancouver (June 2013)
- Program committee co-chair, 9th Annual Canadian Risk and Hazards Symposium, Vancouver, Canada, Oct. 2012.
- "Anticipating Cascading Consequences of Infrastructure Failures in Disasters," keynote presentation, 4th Australasian Natural Hazards Management Conference, Wellington, New Zealand, August 2010.
- Panel presentation (invited), panel on Urban Vulnerability, 35th Natural Hazards Conference, Broomfield, Colorado, July 2010.
- Technical committee member, 10th Canadian / 9th U.S. National Conference on Earthquake Engineering, Toronto, Canada, to be held July 2010.
- Program committee chair, 4th Annual Canadian Risk and Hazards Symposium, Vancouver, Canada, Nov. 2007.
- U.S. organizing committee member, 2nd International Conference on Urban Disaster Reduction, Taipei, Taiwan, November 2007.
- Steering committee member, 1st International Conference on Urban Disaster Reduction, Kobe, Japan, Jan. 2005.
- Technical Program Committee member, 7th National Conference on Earthquake Engineering, Boston, July 2002.
- Steering committee member, 6th U.S.-Japan Workshop on Urban Earthquake Hazards Mitigation, Kobe, Jan. 1999.
- Steering committee member, 5th ASCE Technical Council on Lifeline Earthquake Engineering, Seattle, Conference, August 1999.
- Events committee member, 6th National Conference on Earthquake Engineering, Seattle, May 1998.
- Steering committee member, Earthquake Engineering Research Institute Conference on "Economic Impact of the Northridge Earthquake," Pasadena, October 1995.
- Assistant to conference organizer, NCEER Conference on "The Economic Consequences of Earthquakes: Preparing for the Unexpected," New York, September 1995.

## 10. SERVICE TO THE UNIVERSITY

### (a) *Memberships on committees, including offices held and dates*

- Director Search Committee for IRES, Faculty of Science, 2017~present
- Director Search Committee for SCARP, Faculty of Applied Science, 2017~present
- Awards Committee, Faculty of Applied Science, 2016~present
- Task Force on MCRP Program Clarity (chair), SCARP, 2016~present
- Professional Programs Steering Committee, Faculty of Applied Science, 2014~2015
- Teaching, learning, and curriculum (TLC) committee, SCARP, 2013~2015
- Faculty promotion & tenure committee (for M. Stevens) (chair), SCARP, 2013~14
- Appointments, Reappointments, Promotion, and Tenure (ARPT) committee, Faculty of Applied Science, 2012~present
- Dean search committee, Faculty of Applied Science, 2012
- Faculty search committee (chair), SCARP, position in ecological planning, 2012~13
- Faculty promotion & tenure committee (for L. Harris) (chair), IRES, 2012~13
- Promotion and tenure committee, College for Interdisciplinary Studies, 2012
- Task force for space, SCARP, 2012
- Task force for revenue options, SCARP, 2012
- Director search committee, SCARP, 2011~12
- Faculty reappointment committee (for M. Stevens), SCARP, 2011
- Faculty search committee, position in transportation and infrastructure planning, SCARP/Civil Engineering, 2009~2010
- UBC Committee on Interdisciplinarity, 2008~2009
- UBC Climate Risk Assessment project task force, 2008~2009
- Ph.D. awards committee, SCARP, 2008~2010
- Faculty search committee, position in community and regional planning, SCARP, 2007~08
- University adjudication committee, Trudeau scholarships, 2007
- Awards committee, IRES, 2007, 2011~12
- Director search committee, IRES, 2005-06
- Information and computer technology committee, SCARP, 2004, 2006
- Curriculum review committee, SCARP, 2004
- Graduate advisory committee, IRES, 2004
- Graduate admissions committee, SCARP, 2004~2015
- Graduate admissions committee, IRES, 2004, 2008
- Graduate admissions committee, Dept. of Geography, Univ. of Washington, 1999-2000

### (b) *Other service, including dates*

- Associate director, IRES, July 2014~June 2015
- Chair of master's program, SCARP, Jan~Dec 2014
- Interim director, SCARP, July 2012~June 2013
- Associate director of SCARP for Centre for Human Settlements, 2011~2012
- Graduate advisor, RMES program (IRES), Jan. 2008~June 2010
  
- Master's program admissions coordinator, SCARP, July 2009~June 2010
  
- Substituting for colleagues who were away:

- Acting director and chair of awards committee, IRES, October 2007 (2 weeks)
- Acting director, IRES, June 2008 (1 week)
- Acting associate director, SCARP/Centre for Human Settlements, 11/28/07~1/7/08
- Acting director, SCARP, 7/28/08~8/1/08, Feb. 2012 (1 week), Aug. 2014 (2 weeks)
- University examiner, final doctoral oral exam, UBC (2009 – 3 students) (2010 – 1 student) (2011 – 1 student) (2014 - 2 students) (2016 – 1 student) (2017 – 2 students)
- External examiner, master's defense, UBC (2016 – 1)
- Chair, final doctoral oral exam, UBC (2005)

## 11. SERVICE TO THE COMMUNITY

### (a) *Memberships on scholarly societies, including offices held and dates*

Earthquake Engineering Research Institute (EERI)  
 International Society for Integrated Disaster Risk Management (IDRiM)  
 Regional Science Association International (RSAI)

### (b) *Memberships on other societies, including offices held and dates*

### (c) *Memberships on scholarly committees, including offices held and dates*

- Committee member, Research Management Committee. Marine Environmental Observation, Prediction, and Response (MEOPAR) NCE, 2012~present.
  - Lead, Response Core, MEOPAR NCE, 2015~present
- Committee member, Technical Advisory Group. Natural Hazards Research Platform, New Zealand, 2011~2015
- Committee member, Committee on Earthquake Resilience – Research, Implementation, and Outreach, **National Research Council** (National Academies), USA, 2009-2011.
- Committee member, Disaster Research in the Social Sciences, **National Research Council** (National Academies), USA, 2004-2006.

### (d) *Memberships on other committees, including offices held and dates*

- Committee member, Technical Advisory Committee for Sea-Level Rise Planning, City of Vancouver, 2013~2016
- Committee member, Technical Advisory Committee for Earthquake Preparedness Planning, City of Vancouver, 2013~2014
- Advisory Board member, Institute for Global and Community Resilience, Western Washington University, 2008~2009

#### *Earthquake Engineering Research Institute (EERI):*

- Member, Honors Committee, 2015~present
- Member, Learning from Earthquakes (LFE) Resilience Committee, 2012~2016
- Chair, Social Science Research Technical Committee, 2002-2010.
- Member, Committee on Future of Multidisciplinary Research, 2007-2008.
- Member, Shah Family Innovation Prize selection committee, EERI, 2005-2008 (committee chair from 2008).
- Member, Learning From Earthquakes Advisory Committee, EERI, 2001-2003.
- Task force member, MCEER Special Task Force (for Center 5-year renewal), 2001.

(e) *Editorships (list journal and dates)*

- Editorial board member, *Oxford Research Encyclopedia: Natural Hazard Science*, 2014~present
- Editorial board member, *Journal of Architectural and Planning Research*, 2014-present
- Editorial board member, *Papers in Regional Science*, 2005-2010.
- Editorial board member, *Earthquake Spectra*, 2003-2008.

(f) *Reviewer (journal, agency, etc. including dates)**Reviewer for grant proposals:*

- Marine Environmental Observation, Prediction, and Response (MEOPAR) NCE (2013, 2014, 2015, 2016, 2017)
- Engineering and Physical Sciences Research Council (EPSRC), UK, programme grants proposal (2015)
- Natural Hazards Research Platform, New Zealand (2012)
- Ontario Research Fund, Research Excellence program, Ontario Ministry of Research and Innovation (2006)
- National Science Foundation, Engineering Research Centers Program (2005)
- NSERC Joint infrastructure interdependencies research project (JIIRP) (2004)
- National Science Foundation grant proposals (1995,1996,1997,1998,1999,2000)
- NSF Review Panel member, Human and Social Dynamics solicitation (2004)
- NSF Review Panel member, Social Science Panel for Hazards Proposals (2003)
- NSF Review Panel member, U.S.-Japan Collaborative Research Program on Urban Earthquake Hazard Reduction (1998)
- South Carolina Sea Grant grant proposal (1999)
- U.S. Geological Survey grant proposal (1996)
- National Academies, Collaboration in Basic Science and Engineering (COBASE) grant proposal (2003)

*Reviewer for publications:*

- chapter for edited book on *Modeling Spatial and Economic Impacts of Disasters* (2017)
- *Mitigation and Adaptation Strategies for Global Change* (2016)
- Committee report, Council of Canadian Academies (2016)
- PLoS One (2015 (x2))
- *Oxford Research Encyclopedia: Natural Hazard Science* (2015, 2016(x2))
- *International Journal of Disaster Risk Reduction* (2015)
- *Natural Hazards* (2014, 2015)
- *Journal of the American Planning Association* (2013, 2014)
- *Journal of Planning Education and Research* (2012)
- *Earthquake Spectra* (1997, 1998, 2000, 2003, 2007, 2008, 2011)
- *Disasters* (2011)
- Project report, Natural Resources Canada (2011)
- *Natural Hazards Review* (2001, 2010)
- *Climatic Change* (2010)
- *Risk Analysis* (2004, 2006, 2007, 2008)
- *Journal of Planning Literature* (2007)
- Committee report, U.S. National Research Council (2005)
- *Journal of Regional Science* (2002, 2003, 2004)
- *Canadian Journal of Civil Engineering* (2004)
- *The Professional Geographer* (2004)
- *Environmental Hazards* (2002, 2003)
- *Planning and Markets* (2003)



- special publication manuscript, Natural Hazards Center, U. of Colorado (2002)
- ASCE Journal of Infrastructure Systems (1997, 2000)
- Papers in Regional Science (2000)

*Reviewer for fellowships:*

- MITACS graduate research internship program (2009)
- Trudeau Fellowship (UBC internal review committee) (2007)
- Public Safety and Emergency Preparedness Canada, Fellowship in Honour of Stuart Nesbitt White (2006)
- Infrastructure Canada student travel award for Planners for Tomorrow conference (2006)
- Earthquake Engineering Research Institute, Professional Fellowship (review committee chair) (1998).

*Reviewer for faculty promotion and/or tenure:*

- External reviewer for faculty promotion and tenure, University of Iowa (2016)
- External reviewer for faculty promotion and tenure, Texas A&M University, Galveston (2015)
- External reviewer for faculty promotion and tenure, Texas A&M University (2013)
- External reviewer for faculty promotion and tenure, University at Buffalo – The State University of New York (2013)

*(g) External examiner (indicate universities and dates)*

- External examiner for Ph.D. thesis, University of Manitoba (2007)

*(h) Consultant (indicate organization and dates)*

- U.S. National Institute of Standards and Technology (NIST), study on "Critical Assessment of Lifeline System Performance: Understanding Societal Needs in Disaster Recovery," (member of Applied Technology Council consulting team), 2014~2015.
- U.S. National Oceanic and Atmospheric Administration (NOAA), study to develop Community Resilience Index for communities on the Gulf of Mexico (member of ImageCat, Inc. consulting team), 2008~2010.
- Multihazard Mitigation Council, for U.S. Congress, independent study to assess future savings from mitigation activities (member of Applied Technology Council consulting team), 2003-04.
- Previously conducted numerous consulting projects as an employee (full-time 1994~1997, part-time 1998~2001) of ABS Consulting (formerly EQE International, Inc.), engineering/risk consultants. Projects for, among others: California Governor's Office of Emergency Services (OES), National Institute of Building Sciences (NIBS) and Federal Emergency Management Agency (FEMA), City of Grand Forks (N. Dakota) and Housing and Urban Development Department (HUD), BC Hydro, Project Impact of King County & Pierce County (Washington).

*(i) Other service to the community*

- Reconnaissance team leader, social sciences team, EERI, Great East Japan (Tohoku) Earthquake and Tsunami, 2011.
- Reconnaissance team member, EERI, Nisqually (Washington) Earthquake, 2001.
- Reconnaissance team member, MCEER, Chi-Chi (Taiwan) Earthquake, 1999.

*Media quotes/interviews:*

- Background interview for Discovery Channel series "Are You Ready?", 5/28/06
- In W. Boei, "Surviving a Quake," Vancouver Sun, 3/24/05, pp.B2-B3. (feature story on my research)
- In K. Johnson, "A City Forever Changed? Maybe Not," The New York Times, 10/7/01, p.A27.
- In A. Gibbs, "Quake Could be Port Nightmare," The News Tribune (Tacoma), 8/31/01.
- In A. Garber, "Seismic Study: Area Bridges Are Not Ready," The Seattle Times, 7/15/01, p.B-1.

- In A. Gibbs, "Bracing for a Big One: Ports of Seattle and Tacoma Take Part in Extensive Study of Potential Quake Damage," The News-Tribune (Tacoma), 4/16/00, p. D-1.
- In Channel 13 (Seattle) feature story on transportation seismic vulnerability in the Seattle area, 5/11/00 and 5/12/00.

*Other:*

- Participant, consultation meeting for Canada's National Disaster Mitigation Strategy, Canadian Office of Critical Infrastructure Protection and Emergency Preparedness, Vancouver, May 2002.

## 12. AWARDS AND DISTINCTIONS

(a) *Awards for Teaching (indicate name of award, awarding organizations, date)*

(b) *Awards for Scholarship (indicate name of award, awarding organizations, date)*

- Earth Sciences Sector Merit Award, Natural Resources Canada. (Part of team led by M. Journeay, awarded for "District of North Vancouver Earthquake Risk Assessment Case Study"). 2015.
- **2011 Distinguished Lecture award**, "to recognize and encourage communication of outstanding professional contributions of major importance for earthquake hazard mitigation," Earthquake Engineering Research Institute (EERI), US\$2,500 plus travel costs. Presented the lecture to 8 student chapters of EERI across North America. 2011.
- **Killam Faculty Research Fellowship**. Competitive fellowship to support UBC faculty during study leaves. University of British Columbia. Up to C\$15,000 plus C\$3,000 in direct research costs. 2010.
- **Aldo Leopold Leadership Fellowship**. Competitive training fellowship for mid-career academic environmental scientists to receive "the skills and connections needed to be effective leaders and communicators." Woods Institute for the Environment, Stanford University. 2008.
- **Canada Research Chair (Tier 2)** in Disaster Management and Urban Sustainability, Jan. 2004~Dec. 2013.
- **Shah Family Innovation Prize**, for "creative and innovative thinkers who have demonstrated at early stages of their careers the potential to make major contributions to the field of earthquake risk mitigation and management." Earthquake Engineering Research Institute (EERI), US\$10,000 prize, 2001.
- Japan Society for the Promotion of Science (JSPS) Postdoctoral Fellowship for Foreign Researchers, for 3-month research visit to Kyoto University Disaster Prevention Research Institute, 2000.
- Japanese Ministry of Education (Mombusho) Research Leadership Grant, for research visit to Kyoto University Disaster Prevention Research Institute, 1999.
- American Association of University Women (AAUW) Educational Foundation American Fellowship, for dissertation research, 1993-94.
- National Science Foundation Graduate Fellowship, 1990-93.
- Hu Shih Memorial Fellowship (Cornell University), for research in Taiwan, 1991.
- Andrew D. White Fellowship (Cornell University), 1989-91 (second year declined).
- Eighth Charles M. Tiebout Prize Competition in Regional Science, honorable mention, 1993.
- David W. Carmichael Prize for best senior thesis in Civil Engineering (Princeton University), 1989. Thesis title: "Seismic Design Codes in Earthquake Hazard Mitigation"

(c) *Awards for Service (indicate name of award, awarding organizations, date)*

(d) *Other Awards*

- Participant (competitively selected), Science Tour 2016 "City of the Future: Research for Sustainable Urban Development," Deutscher Akademischer Austauschdienst (DAAD), Germany, 2016

**13. OTHER RELEVANT INFORMATION (Maximum One Page)**

**THE UNIVERSITY OF BRITISH COLUMBIA**  
**Publications Record**

SURNAME: Chang

FIRST NAME: Stephanie

Initials: SEC

MIDDLE NAME(S): Ei-Ling

Date: 11 April 2017

**NOTES:**

(1) Except where noted, the order of authorship indicates the primary author first.

(2) \* = publications of primary importance with respect to assessing my scholarly contributions

(3) Underline indicates co-authors who are/were my graduate research assistants.

(4) **Bold** indicates my own former master's/doctoral supervisor.

**1. REFEREED PUBLICATIONS**(a) *Journals*

Kim, J.J., K.J. Elwood, F. Marquis, and S.E. Chang. "Factors Influencing Post-Earthquake Decisions on Buildings in Christchurch, New Zealand," *Earthquake Spectra*, in press.

Mochizuki, J. and S.E. Chang. 2017. "Disasters as Opportunity for Change: Tsunami Recovery and Energy Transition in Japan," *Int'l J. of Disaster Risk Reduction* 21: 331-339.

Marquis, F., J.J. Kim, K.J. Elwood, and S.E. Chang. 2017. "Understanding Post-Earthquake Decisions on Multi-Storey Concrete Buildings in Christchurch, New Zealand," *Bulletin of Earthquake Engineering* 15(2): 731-758. (first online May 2015) DOI 10.1007/s10518-015-9772-8

Fujimi, T., Y. Kajitani, and S.E. Chang. 2016. "Effective and persistent changes in household energy-saving behaviors: Evidence from post-tsunami Japan," *Applied Energy* 167: 93-106.

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McDaniels, T., S.E. Chang, D. Hawkins, G. Chew, and H. Longstaff. 2015. "Towards Disaster-Resilient Cities: An Approach For Setting Priorities In Infrastructure Mitigation Efforts", *Environment, Systems and Decisions*. Online March 01.

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4. **PATENTS**5. **SPECIAL COPYRIGHTS**

6. **ARTISTIC WORKS, PERFORMANCES, DESIGNS**

7. **OTHER WORKS**

**Resilient Coasts Canada platform** ([www.resilient-c.ubc.ca](http://www.resilient-c.ubc.ca)) – Online interactive information platform on coastal communities' hazard vulnerability. For planners to share information to build community resilience. The platform enables communities to identify "peers" (i.e., communities sharing its hazard vulnerability attributes and profile) and to learn about actions they are undertaking to reduce risk. Currently includes 50 large localities in BC Salish Sea coastal region. Officially launched in August 2016 (including 3 webinars).

8. **WORK SUBMITTED (including publisher and date of submission)**

Chang, S.E. and H. Dowlatabadi. "Transportation Disruptions and Regional Supply Chains: A Modeling Framework with Application to Coastal Shipping," Y. Okuyama and A. Rose, eds., *Modeling Spatial and Economic Impacts of Disasters*, 2nd ed. (submitted March 2017)

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Oulahen, G., S.E. Chang, J.Z.K. Yip, T. Conger, M. Marteleira, and C. Carter. "Incorporating Institutional Factors in an Indicator-Based Analysis of Hazard Vulnerability for Coastal Communities," *J. Environmental Planning and Management* (submitted March 2016)

Chang, S.E. "Damage and Economic Impacts in the Great East Japan Earthquake," book chapter submitted to Edgington, D. and S.E. Chang, eds., *Recovery and Reconstruction after Japan's Triple Disaster: Lessons for British Columbia*. (submitted February 2016)

Costa, R., T. Haukaas, S. Chang, and H. Dowlatabadi. "Network model to assess the probability of fuel shortage due to earthquakes in coastal British Columbia," Proc. 12th International Conference on Structural Safety and Reliability, August 2017 (accepted)

9. **WORK IN PROGRESS (including degree of completion)**

- report on fuel distribution system in BC (90% complete) - with H. Dowlatabadi, A. Brown, B. Dobson, R. Costa, X. Shen, A. Tanner
- paper on hazard vulnerability types (60% complete) - with J. Yip, G. Oulahen, T. Conger, M. Marteleira
- paper on communities' risk reduction actions (40% complete) - with J. Yip, G. Oulahen, T. Conger, M. Marteleira, E. Gray
- paper on maritime disruption and acute healthcare (90% complete) - with N. Errett