



OFFICE OF THE VICE-PRESIDENT, ACADEMIC AND PROVOST

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www.sfu.ca/vpacademic**MEMORANDUM**

ATTENTION	Senate	DATE	December 9, 2014
FROM	Jon Driver, Vice-President, Academic and Provost, and Chair, SCUP	PAGES	1/1
RE:	Faculty of Environment: Full Program Proposal for a Minor in Resource and Environmental Management (SCUP 14-35)		

At its December 3, 2014 meeting, SCUP reviewed and approved the Full Program Proposal for a Minor in Resource and Environmental Management in the School of Resource and Environmental Management within the Faculty of Environment, effective Fall 2015.

Motion:

That Senate approve and recommend to the Board of Governors the Full Program Proposal for a Minor in Resource and Environmental Management in the School of Resource and Environmental Management within the Faculty of Environment, effective Fall 2015.

c: S. Cox
D. Burns

A handwritten signature in dark ink, appearing to be "Jon", is written over the bottom right portion of the page.



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MEMORANDUM

ATTENTION	Senate Committee on University Priorities	DATE	November 7, 2014
FROM	Gordon Myers, Chair	PAGES	1/1
	Senate Committee on Undergraduate Studies		
RE:	Faculty of Environment (SCUS 14-45c)		

A handwritten signature in black ink, appearing to read "Gordon Myers", is written over the signature line of the memorandum.

Action undertaken by the Senate Committee on Undergraduate Studies at its meeting of November 6, 2014, gives rise to the following recommendation:

Motion

That SCUP approve and recommend to Senate the Full Program Proposal for the Minor in Resource and Environmental Management in the School of Resource and Environmental Management within the Faculty of Environment.

The relevant documentation for review by SCUP is attached.

Full Program Proposal
Minor in Resource and Environmental Management
School of Resource and Environmental Management
Faculty of Environment, Simon Fraser University
22 September 2014

Executive Summary

Solving contemporary environmental problems requires an academic background that integrates both natural and social sciences. This Full Program Proposal describes a new Minor in Resource and Environmental Management (REM) that will provide SFU undergraduate students with the basic skills and understanding they need to integrate natural and social systems concepts into resource management applications. SFU committed to this need by increasing environmental education through the Faculty of Environment (FENV) and strategic increases in environmental programming in other Faculties. FENV's new Bachelor of Environment credential, along with three new Major degrees, provides an important step toward meeting those commitments. A REM Minor would fill the current gap in interdisciplinary environmental-related minor options at all BC Universities, including SFU. The 24 units comprising the REM Minor balance social and natural sciences courses; integrate social and natural sciences within most courses; focus on applied topics and contemporary resource management issues; and are taught by experienced REM faculty who are internationally recognized for excellence in resource management practice, research, training, and advising.

1. Credential to be awarded:

Minor in Resource and Environmental Management

2. Location:

SFU Burnaby

3. Faculty:

Faculty of Environment

4. Anticipated program start date:

September 2015

5. Description of the proposed program:

a) Aims and Objectives:

A REM Minor provides an opportunity for SFU undergraduates to study applied environmental management issues from both natural and social sciences perspectives. The program aims to establish student abilities to: (1) understand and articulate how the dynamics of natural and social systems are inter-related in resource management issues; (2) explain how natural resource management strategies and techniques are formulated for environmental planning and decision-making; and (3) demonstrate the biological, physical, social, economic, and institutional implications of resource and environmental management decisions. These aims provide an environmental management perspective to complement a wide range of existing Major degrees within SFU Faculties.

b) Anticipated contribution to mandate and strategic plan of the institution

The Faculty of Environment's aim to fill a critical societal need for environmental education is consistent with SFU's strategic objectives, student demand, and emerging career opportunities in the environmental field. The broad expertise within REM and FENV is essential to achieving these goals by delivering undergraduate environmental programming that is innovative, interdisciplinary, and flexible. The proposed REM Minor, which is a key part of the FENV Five-Year Plan, engages all FENV units by providing an interdisciplinary program of study on applied environmental topics from social and natural science perspectives. The REM Minor would also benefit students from other SFU Faculties who wish to gain depth in environmental resource management while seeking majors in other disciplines.

c) Target audience

The REM Minor will offer interdisciplinary environmental education for full and part-time students from all faculties at SFU.

d) Content

Students must complete 6 lower division units and a total of 18 upper division units consisting of at least 15 units from REM upper division electives, and an optional 3 units from upper division electives.

Lower division requirements (6 units)

One of REM 100 (3), EVSC 100 (3), GEOG 100 (3), GEOG 111 (3)

and

REM 200 (3) Introduction to Resource and Environmental Management

REM upper division electives (minimum of 15 units)

Upper division REM courses form the core of the REM Minor, offering opportunities to develop and apply interdisciplinary thinking skills to specific topics in environmental management.

REM/SCD 301 (4) Sustainable Community Development Theory and Practice
REM 311 (3) Applied Ecology and Sustainable Environments
REM/ENV 321 (3) Ecological Economics
REM 350 (3) Sustainable Energy and Materials Management
REM 356 (3) Institutional Arrangements for Sustainable Environmental Management
REM 363 (3) Special Topics in Natural Resource Management
REM 370 (3) Global Resource Issues in Oceanography
REM 375 (3) Ecology and Conservation of Coastal BC
REM/SCD 401 (4) Social Enterprise for Sustainable Community Development
REM/SCD 403 (4) Leadership in Sustainable Community Development
REM 412 (3) Environmental Modeling
REM 445 (3) Environmental Risk Assessment
REM 471 (3) Forest Ecosystem Management

Students must complete an additional 3 units from either the above list of REM upper division courses, or from the upper division electives listed below.

Upper division electives

Elective courses allow students to specialize in either social or natural science aspects of resource management.

ARCH 365 (3) Archaeological Perspectives on Human Ecology
ARCH 386 (3) Archeological Resource Management
BISC 309 (3) Conservation Biology
BISC 413 (3) Fisheries Ecology
BISC 419 (3) Wildlife Biology
EASC 405 (3) Water, Environment and Climate Change
ENSC/ENV 412 (3) Technologies, Cultures and a Sustainable World
ENV 319 (3) Environmental Law
ENV 320W (3) Ethics and the Environment
FNST 403 (3) Indigenous Knowledge in the Modern World
GEOG 315 (4) World Ecosystems
GEOG 316 (4) Global Biogeochemical and Water Cycles
GEOG 322 (4) World Resources
GEOG 389W (4) Nature and Society
GEOG 415 (4) Conservation Biogeography
GEOG 428 (4) World Forests
HSCI 304 (3) Perspectives on Environmental Health
PHIL 328 (3) Environmental Ethics
PHYS 346 (3) Energy and the Environment
SA 371 (4) The Environment and Society

e) Delivery methods

REM Minor courses are delivered in the usual ways, including lectures, tutorial discussions, projects, and computer laboratories.

All students must obtain approval from a Faculty of Environment Academic Advisor in order to be enrolled in the REM Minor. Advising for the REM Minor will be carried out by REM staff.

f) Linkages between learning outcomes and the curriculum design, including an indication whether a work experience/work place term is required for completion

A work experience/work place term is not required for REM Minor completion.

Educational goals

The overall goal of the REM Minor is to provide an interdisciplinary education in the theory and application of resource and environmental management concepts to modern environmental issues. Educational goals supporting the Minor will be developed in the natural and social sciences, practical research and analytical methods, and personal skills such as collaboration, ethics, and communication.

Educational goals of the REM Minor:

1. Familiarity with major Canadian and global environmental issues, their causes, and consequences.
2. Ability to identify and describe the inter-relationships among ecological, economic, institutional, cultural, and policy aspects of environmental issues.
3. Familiarity with quantitative and qualitative tools used in decision-making and ability to apply basic tools to real-world natural resource management problems.
4. Ability to understand how natural resource managers integrate natural and social systems concepts into management applications.
5. Ability to collaborate and communicate in interdisciplinary problem-solving.

g) Distinctive characteristics

SFU's School of Resource and Environmental Management is Canada's premier graduate program in environmental management. The main strength of the program lies in REM faculty who are engaged in local, national, and international environmental management applications, research, and training. This experience allows REM faculty to create distinctive applied and interdisciplinary characteristics for REM courses. The REM Minor will provide a unique opportunity for undergraduate students to benefit from these characteristics and learn how interdisciplinary approaches influence environmental policy and decision-making.

h) Anticipated completion time in year or semesters

Completion of the REM Minor will take the same time as Minors in other programs. Students must complete a total of 24 units including 2 lower division introductory courses on environmental change and/or environmental management, and 6 upper division REM (or equivalent) courses selected from a list of electives. Specific timing will depend on individual student's course selections combined with course availability. All required courses are offered annually; all electives within REM upper division courses are offered annually or semi-annually.

i) Enrolment plan for the length of the Program

The REM Minor will be open to all undergraduate students registered at SFU in good academic standing and who have completed the lower division requirements (item D). Students may complete the REM Minor as part of the Faculty of Environment Double Minor Bachelor of Arts.

Detailed requirements for enrolling in and completing the REM Minor will be provided to Faculty/Department Academic Advisors and publicized through the Faculty of Environment website and other SFU media outlets.

j) Policies on student evaluation

Student evaluation will follow policies and procedures relevant to the selected courses. These include, but are not limited to: written and oral exams, laboratory assignments, practical exams, oral presentations, term papers, and term projects.

k) Policies on faculty appointments

SFU makes Faculty appointments in conformity with Provincial law and its own procedures, as defined by SFU's Board of Governors.

l) Policies on program assessment

The REM Minor will be governed and managed by the School of Resource and Environmental Management, in conformity with Faculty of Environment and University regulations. The REM Undergraduate Curriculum Committee will meet once each year to evaluate REM Minor topics, including curriculum development and enrolment.

m) Levels of support from post-secondary institutions (including plans for admissions and transfer within the British Columbia post-secondary education system) and relevant regulatory or professional bodies, where applicable;

As per SFU's transfer credit procedures, students may transfer units from BC colleges

and universities into this program. There is no applicable regulatory or professional body that requires accreditation of this Minor.

n) Evidence of student interest and labour market demand;

Student interest

Recent SFU student surveys and focus groups support new environmental programs at SFU. For example, in a survey of 5,000 SFU undergraduate students, 400 (8%) were "very interested" in a new Bachelor of Environment (BEnv) credential and major programs. In two focus groups conducted by the Sustainable SFU student association, students expressed strong support for the BEnv credential and interdisciplinary content. We expect that these responses reflect similar levels of interest in programs such as the REM Minor.

Evidence of demand is also demonstrated in course evaluation requests for additional REM courses and programs:

"Great lectures. Loves how the subject rubbed off on me and how I live my daily life. Will take 300, 400 classes in the future" - REM 100 student, Spring 2014

"I really enjoyed this class...as well as I am now interested in taking more REM classes in the future." – REM 100 student, Fall 2013

"Would be nice to have another REM elective to take." – REM 100 student, Fall 2010

The following table demonstrates the diverse range of students recently enrolled in REM undergraduate courses.

Program	Lower Division	Upper Division
Bachelor of Arts	142	109
Bachelor of Science	54	42
BA Environment	46	49
Bachelor of Business Admin	27	12
BSc Environment	22	89
BA Communication	16	11
BSc Computing Science	10	N/A
BSc Health Sciences	6	5
BA Health Sciences	3	4
Bachelor of Fine Arts	3	N/A
BASc Engineering Science	3	N/A
Bachelor of General Studies	2	1
BGS Education	2	1
BSc Interactive Arts & Tech	2	1
Environment non	2	3
Applied Sciences non	1	4
Arts and Social Sc non	1	1
BA Communications, Art & Tech	1	N/A
BGS Applied Sciences	1	N/A
Science non	1	1
PB Dipl in Sustainable Com Dev	N/A	3

Labour market demand

Demand for well-educated environmental professionals is on the rise in Canada. According to Environmental Careers Organization (ECO), between 2007 and 2010, the total number of Canadian workers who spent at least 50% of their time on environmental activities increased from 3.2% to 4%. Environmental employment remained relatively strong during this period despite large-scale disruption to the global economic system. Lack of educated and experienced workers is one of the biggest challenges currently facing the environmental services sector, and this may continue into the foreseeable future. For instance, as of 2010, approximately 682,000 people were employed in environmental work; however, potentially 100,000 (14%) of these environmental positions will need replacing over the next decade due to workforce ageing (Profile of Canadian Environmental Employment: Labour Market Research Study, ECO, 2010).

For non-Environment majors at SFU, resource management and sustainability training obtained under the REM Minor would enhance student competitiveness and job advancement in the emerging green economy. For example, according to a survey of 343 executives, directors, and managers working in corporate sustainability departments in North America, undergraduate education spanned both majors and minors in Business/Management, Engineering, and Environmental Studies (Green Biz Group, Inc. 2013. *State of the Profession 2013*. www.greenbiz.com).

o) Related programs in your own or other BC post-secondary institutions;

- (1) SFU – Bachelor of Environment
 - a. REM Minor will complement the BEnv majors by providing an environmental minor option for both FENV and non-FENV students.
 - b. Environmental Resource Management Bachelor of Environment students should not be eligible for the REM minor.
- (2) SFU Faculty of Environment – Double Minor BA
- (3) SFU – Minor Physical Geography
 - a. Primarily a physical sciences without upper division social sciences related to resource management
- (4) University of Victoria – Minor Human Dimensions of Climate Change
 - a. This program focuses on Climate Change, while the REM Minor includes climate change as study topic in particular courses. The REM Minor is aimed at natural and social sciences across a wide range of scales.
- (5) University of Northern British Columbia - Minor Environmental Studies and Global Environmental Change
 - a. This Minor is part of an Arts program and therefore does not include the breadth and depth of natural sciences that occur within the REM Minor.
- (6) University of British Columbia – Minor Environment and Society
 - a. This Minor is part of an Arts program and therefore does not include the

breadth and depth of natural sciences that occur within the REM Minor.
b. Requires 6 Science credits

6. Institutional contact person:

Sean Cox, REM Undergraduate Chair
School of Resource and Environmental Management
Phone: 778-783-5778
Email: spcox@sfu.ca
10 September 2014

Dan Burns, Manager – FENV Curriculum and Planning
Phone: 778-782-9225
Email: dburns@sfu.ca

Appendix A: Proposed Calendar Entry

Admission Requirements

All students must obtain approval from a Faculty of Environment Academic Advisor in order to be enrolled in the REM Minor. Advising for the REM Minor will be carried out by REM staff. Environmental Resource Management Bachelor of Environment students are not eligible for the REM Minor.

Program Requirements

Students must complete 6 lower division units and a total of 18 upper division units consisting of at least 15 units from REM upper division electives, and an optional 3 units from upper division electives.

Lower division requirements (6 units)

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and

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REM upper division electives (minimum of 15 units)

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of resource management.

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ARCH 386 (3) Archeological Resource Management
BISC 309 (3) Conservation Biology
BISC 413 (3) Fisheries Ecology
BISC 419 (3) Wildlife Biology
EASC 405 (3) Water Cycles and Resources: Environmental and Climate Change Impacts
ENSC/ENV 412 (3) Technologies, Cultures and a Sustainable World
ENV 319 (3) Environmental Law
ENV 320 (3) Ethics and the Environment
FNST 403 (3) Indigenous Knowledge in the Modern World
GEOG 315 (4) World Ecosystems
GEOG 316 (4) Global Biogeochemical and Water Cycles
GEOG 322 (4) World Resources
GEOG 389 (4) Nature and Society
GEOG 415 (4) Conservation Biogeography
GEOG 428 (4) World Forests
HSCI 304 (3) Perspectives on Environmental Health
PHIL 328 (3) Environmental Ethics
PHYS 346 (3) Energy and the Environment
SA 371 (4) The Environment and Society

Appendix B: REM Courses and Descriptions

REM 100 - Global Change (3)

This course provides students with an overview of global environmental change and its causes from a social science perspective, historically and at the present time. Population growth, an increasing ecological footprint and changes in ideology, social organization, economy and technology will be critically reviewed. New ways of thinking in natural and social science will be considered in relation to specific issues such as land, soil and food; energy, raw materials and solid waste; air pollution and transportation; water, oceans and fisheries; climate change; forestry and biodiversity; urbanization, and alternative futures. Breadth-Social Sciences. Equivalent Courses: ENPL100. Breadth-Social Sciences.

REM 200 - Introduction to Resource and Environmental Management in Canada (3)

Explores the natural and social science foundations of resource and environmental management and demonstrates how that knowledge can be used in environmental decision-making. Provides a basic understanding of the nature and management of natural resources, strategic thinking for environmental planning, socio-economic and biophysical trade-offs in natural resource decision making and approaches for addressing uncertain knowledge. Prerequisite: One of REM 100, GEOG 100 or 111, or EVSC 100; and completion of at least 30 credits. Breadth-Social Sci/Science.

REM 201 - Introduction to Sustainable Community Development (3)

Builds an understanding of strengths and weaknesses of conventional approaches to development; rationale for alternative approaches; varying interpretations of community and of development; and essential components for creating local economic development strategies. Sustainable community development is introduced as a framework to meet current social and economic needs while ensuring adequate resources are available for future generations. Students with credit for CED or SCD 201 may not complete this course for further credit. Prerequisite: 30 units. Not permitted for credit toward the Sustainable Community Development Post Baccalaureate Diploma. Breadth-Social Sciences.

REM 301 - Sustainable Community Development Theory and Practice (4)

A theoretical foundation for understanding sustainable development at the community level, including an integrated approach to the environmental, economic, and social aspects of development. Emphasizes economic and policy instruments, and planning tools, for engaging in and implementing SCD. Students with credit for CED or SCD 301 may not complete this course for further credit. Prerequisite: CED or SCD 201 or REM 201 or completion of 60 units. Breadth-Social Sciences.

REM 311 - Applied Ecology and Sustainable Environments (3)

Students will learn to apply the ecological concepts introduced in prereq courses to applied ecological problems at the population, community, and ecosystem levels of organization. Emphasis will be placed on processes which drive ecological dynamics, on recognizing those processes and dynamics in applied contexts, and on interpreting

ecological data. Prerequisite: REM 100 or EVSC 100; BISC 204 or GEOG 215; STAT 101 or GEOG 251 or STAT 201 or equivalent. Quantitative.

REM 321 - Ecological Economics (3)

Introduces students to the concepts and methods of ecological economics. Provides students with grounding in the core principles of conventional economics applied to the environment but then extends this to the integration of economics and ecology to create a new ecological-economic understanding of environmental change and sustainability. Students who have taken ECON 260 cannot take this course for further credit. REM 321 is identical to ENV 321 and students cannot take both for credit. Prerequisite: minimum of 45 units.

REM 350 - Sustainable Energy and Materials Management (4)

Takes an interdisciplinary approach to sustainable management of society's energy and materials flows. Topics range from thermodynamics and estimates of global resources to market-based policies and governance Institutions. Peak oil, renewable energy and carbon capture and storage are also discussed. The role for green consumerism in light of climate challenge are highlighted. Prerequisite: 45 credit hours.

REM 356 - Institutional Arrangements for Sustainable Environmental Management (3)

This course provides an overview of some basic legislation, agencies, and policies which currently are in use to regulate the natural environment at the international, nation, provincial, regional, and local levels. Its purpose is to present a basic set of evaluative questions which can be used to address the effectiveness and efficiency of the environmental regulatory and management systems currently in use. Prerequisite: REM 100.

REM 363 - Special Topics (3)

Please see departmental advisor for details about this course offering

REM 370 – Global Resource issues in Oceanography (3)

Introduces principles of oceanography, including ocean circulation, ocean carbon cycling, nutrients and biological productivity, oceans and the climate system, and ocean resource contributions to global food supply. Provides basic understanding of ocean resource management including transportation, recreation, fisheries, and mining. Prerequisite: EASC 100, EVSC 100, GEOG 111, or REM 100.

REM 375 - Ecology and Conservation of Coastal BC (3)

Investigates the ecosystems and environmental challenges of coastal British Columbia. Examines the major flora and fauna, fundamental ecological principles, anthropogenic drivers of change, and the role of applied science in conservation and management. Prerequisite: 60 units.

REM 401 - Social Enterprise for Sustainable Community Development (4)

Introduction to the theory and practice of social enterprise within a SCD context, including the appropriate form of social enterprise for a particular purpose. Students with credit for CED or SCD 401 may not complete this course for further credit. Prerequisite: CED or SCD 301 or REM 301.

REM 403 - Leadership in Sustainable Community Development (4)

Concerned with approaches that SCD leaders require as agents of change, including tackling complex community issues in addition to offering the innovative tools for engaging others in meaningful collaboration processes. Students with credit for CED or SCD 403 may not complete this course for further credit. Prerequisite: CED or SCD 301, or REM 301.

REM 412 - Environmental Modeling (3)

Students receive hands-on experience in the construction and analysis of computer simulation models of environmental and ecological systems and problems. Prerequisite: REM 100 or EVSC 100; BISC 204 or GEOG 215; STAT 101 or 201 or 203 or 270 or equivalent; 60 units. Quantitative.

REM 445 - Environmental Risk Assessment (3)

Students receive theory and practical experience in the control and management of hazardous substances in the environment. This includes the application of techniques used to assess toxicological, ecological and human health risks of contaminants within the current regulatory framework. Prerequisite: MATH 151 or 154 or 157; STAT 101 or 103 or 201 or 301 or GEOG 251.

REM 463 - Special Topics (3)

Please see departmental advisor for details about this course offering

REM 471 - Forest Ecosystem Management (3)

Students will examine the problems of managing forest ecosystems for a variety of societal goals and objectives. The course will start with an examination of the ecological characteristics of forest ecosystems and their dynamics. The second section will focus on the objectives and tools of forest management in an ecological context. The final section of the course will focus on the institutions, economics and policies of forest management, with a focus on British Columbia's historical and current management issues. This course will involve lectures, group discussions, field trips, and exercises. Prerequisite: At least one of REM 311, BISC 304, BISC 310, BISC 404, GEOG 315, or GEOG 316.

Appendix C: Faculty Profiles

Jonn Axsen

(<http://www.rem.sfu.ca/people/faculty/jaxsen>)

Jonn is an Assistant Professor in the School of Resource and Environmental Management at SFU, which he joined in 2011. He holds degrees in Business Administration and Environmental Management, and took his Ph.D. in Transportation Technology and Policy at the University of California, Davis.

Focusing on sustainability, Jonn's research program focuses on climate policy, technological change, and consumer behaviour. In particular, Jonn's extensive research on social influence in the electric vehicle market earned international recognition when the OECD's International Transport Forum named him "Young Researcher of the Year" in 2011. Jonn is trained in a wide range of quantitative and qualitative research methods, including statistical analysis, discrete choice modeling, energy-economy modeling, and ethnographic interviews. His research innovations include empirical findings, methodological advancements, and development of behavioural theory.

Over the last five years, Jonn has published 16 peer-reviewed articles in the highest ranked journals in his field ("environmental studies"), as well as two book chapters, and numerous academic and industry reports. Jonn regularly presents his research results at peer-reviewed international conferences such as the International Society for Ecological Economics, the National Academy of Sciences' Transportation Research Board, and the Behaviour, Energy and Climate Change annual conference. He is regularly invited to present directly to various institutions, such as Environment Canada, the U.S. Department of Energy, and numerous automakers and energy companies. He currently supervises nine Master's students, and co-supervises two Ph.D. students.

Since joining SFU, Jonn has won over \$600,000 in research grants, including serving as principal investigator on two SSHRC grants (Insight and Insight Development), the Province of BC, and as co-investigator on grants awarded by Natural Resources Canada, the Pacific Institute of Climate Change, and SSHRC Partnership Development. Jonn has served on the SSHRC Insight Grant adjudication committee for "Environmental Studies" in 2013 and 2014, and in 2013 was invited to serve on the BC government's advisory working group for the Low-Carbon Fuel Standard.

Andrew Cooper
(on Twitter @QuantEcologyABC)

Andy has been a professor in the School of Resource and Environmental Management at Simon Fraser University since 2008. He has a Ph.D. in Quantitative Ecology and Resource Management from the University of Washington, a Master's of Forest Science in Wildlife Ecology from the School of Forestry at Yale University, and B.A. in Economics and Mathematical Methods for the Social Sciences from Northwestern University. Before teaching in REM, Andy was a fisheries policy analyst and stock assessment scientist for the National Audubon Society's Living Oceans Program, a biostatistician at Boston Children's Hospital, and a research professor in the Department of Natural Resources at the University of New Hampshire.

Andy's research applies statistical models and computer simulations to problems in natural resource management, particularly in the area of fish and wildlife management. Most recently, Andy has focused on adapting tools from epidemiology and medical diagnostic screening for use in designing and evaluating ecological indicators. This research has been funded by an NSERC Discovery grant which was just renewed, has led to publications in Conservation Biology (2) and the Proceedings of the Royal Society B (1), and is the topic of three ongoing international collaborative projects with multiple manuscripts in preparation. Andy's students have been involved in a wide range of topics including caribou management, salmon ecology, skate abundance estimation, whale spatial distribution and energetics, lake nutrient cycling, and even grizzly bear harvests. In addition, Andy collaborates and publishes with students and faculty in REM and in SFU's Department of Biology Sciences, along with those outside of SFU, on topics such as wind dynamics, ocean acidification, wildfire risk assessment, clouded leopard abundance estimation, sea turtle diving behavior, human/bear encounters, biodiversity and ecological portfolio management, fish ecology, and historical ecology.

Outside of SFU, Andy has served as a scientific advisor for numerous fishery management bodies throughout the globe. He spent over 10 years on the science advisory panel for the organization that manages fisheries in the U.S. South Atlantic and now serves on the science advisory panel for the U.S. Pacific Fishery Management Council. He has twice served as an invited expert for the Indian Ocean Tuna Commission (IOTC) and will be spending part of Summer 2014 in the Seychelles helping develop training material for scientists in IOTC developing countries. Andy has served on multiple review panels for Fisheries and Oceans Canada, and is currently an Associate Editor at the Canadian Journal of Fisheries and Aquatic Sciences.

Sean Cox

Sean is a fisheries scientist interested in applying mathematical, statistical, and technology solutions to fisheries management and conservation challenges. He has been an Associate Professor (2009) in the School of Resource and Environmental Management at Simon Fraser University since 2002 following a 2-year postdoctoral fellowship at the University of Wisconsin. His academic background includes a B.Sc. Biology and Chemistry (University of Massachusetts, Lowell 1993), M.Sc. Oceanography (University of B.C., 1997), and Ph.D. Resource Management and Environmental Studies (U.B.C., 2000).

Sean is currently Director of the Cooperative Resource Management Institute at SFU and co-leads the Fisheries Science and Management Research group with Dr. Andy Cooper. Sean is known within Canada and internationally for his stock assessment modeling expertise and application of design-based approaches to managing some of North America's largest and most valuable fisheries for Sablefish, Pacific Halibut, and Pacific Hake. He currently Chair's the Scientific Review Board of the International Pacific Halibut Commission, is the Independent Member of the Pacific Hake Joint Technical Committee, and has served on invited expert review panels for South African Sardine and Hake, Chilean Hoki, Southern Resident Killer Whales, as well as several regional and national Canadian fisheries. He has published over 40 original research articles and technical reports. Sean plans to pursue an NSERC Industrial Research Chair in Fisheries to establish SFU as a leader in research and training for the future of fisheries.

Alison Gill

Dr. Gill is a social geographer who holds a joint appointment in the Department of Geography and the School of Resource and Environmental Management. She specializes in tourism with a focus on community development and planning issues in tourism environments. This has evolved from an earlier research interest in the planning and design of new single-industry resources communities. Dr. Gill's research has for many years focused on issues of growth and change associated with tourism in mountain resort communities. She has received SSHRC research funding to examine such issues as growth management, corporate-community relationships and amenity migration. Institutional arrangements and the politics of place are important theoretical constructs underpinning much of her work and she is currently working on the topic of changing resort governance. She has co-organized two international conferences on the topic of mountain resort planning and development and published extensively on these topics. Dr. Gill also has research interests in coastal areas and as a Board member of the Ocean Management Research Network (OMRN) represents the interests of coastal and marine tourism in this multi-disciplinary group.

Dr. Gill has recently served as the President of the Canadian Association of Geographers. She serves on the editorial boards of "Tourism Geographies", "Journal of Travel Research", "Annals", "Association of American Geographers" and the "Journal of Architectural and Planning Research". She has recently been elected as a Fellow of the International Academy for the Study of Tourism. She is also a Fellow of the Royal Canadian Geographical Society and serves on the Society's Board of Governors.

Frank Gobas
(<http://www.rem.sfu.ca/toxicology/>)

Joined SFU in 1990, currently is a Full Professor in the School of Natural Resource & Environmental Management and Associate Member of the Department of Biological Sciences at Simon Fraser University as an instructor in the Masters of Environmental Toxicology (MET) Program. Dr. Gobas has served 3 terms as the Director of REM and has served in many other administrative functions in REM, FENV and SFU including the SFU Faculty Restructuring committee that led to the founding of the Faculty of the Environment.

Dr. Gobas' research is focused on the (i) Mechanisms of the uptake, bioaccumulation and transformation of organic substances in aquatic and terrestrial wildlife and humans, (ii) Modelling the dynamics of chemical distribution and effects in food-chains and the (iii) Hazard and health risk assessment of environmental pollutants. His food-chain bioaccumulation models have been adopted by Environment Canada for bioaccumulation categorization and by the USEPA for water quality guideline development and pesticide registration. His current research includes bioremediation of waste waters in the Alberta oil sands.

Dr. Gobas has worked with government agencies, industry and international organizations in Canada, US, Europe, Japan and China on regulatory issues related to the fate, effects and risks of environmental contaminants in wildlife and human populations. Dr. Gobas has been a member of the UN Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP) (This is the scientific advisory body of the IMO, FAO, UNESCO, IOC, WMO, WHO, IAEA, UN and UNEP on global marine environment & protection), a Member of the Aquatic Life Criteria Panel of the US-EPA Science Advisory Board and a Member of the Science Advisory Board for Contaminated Sites in British Columbia. He has also been involved in a professional capacity in a number of contaminant fate and exposure studies in the US (e.g. San Francisco Bay, Housatonic River).

Dr. Gobas has published 183 scientific papers. At SFU, he has taught Applied Environmental Toxicology, Risk Assessment, Simulation Modelling in Resource Management, Global Change, Introduction to Resource Management and Directed Studies in Resource Management. He has graduated 42 students and is currently supervising 3 Ph.D. and 7 Master students.

Thomas Gunton

Dr. Gunton is Professor and Director of the Resource and Environmental Planning Program at Simon Fraser University, which is professional planning program within REM certified by the Canadian Institute of Planners. Dr. Gunton has been a faculty member in REM since 1979. He has a PhD in Planning from the University of British Columbia and a Masters in Environmental and Resource Planning from the University of Waterloo. Dr. Gunton has extensive professional experience including holding the positions of Deputy Minister of Environment, Lands and Parks, Deputy Minister of Cabinet Policy Secretariat and Deputy Minister of Finance (Treasury Board) for the Government of British Columbia. He has also held senior positions with the Government of Manitoba, including Assistant Deputy Minister of Energy and Mines where he was in charge of major natural resource project development, Senior Economic Analyst in the Ministry of Economic Development and was visiting professor in resource and environmental economics at the University of Manitoba.

Dr. Gunton research includes evaluation of resource development projects, regional development strategies and negotiation and collaborative models for resolving resource and environmental conflicts. While working for the BC government he was managed a number of major initiatives including: a new Environmental Assessment Act, a new Forest Practices Code, a forest sector strategy, a new regional land use planning process, a major expansion of the provincial parks system, a redesign of the regulatory and royalty system for oil and gas development and new air pollution regulations. He was also the chief negotiator for the province on a number of major resource development projects including Kemano completion. Dr. Gunton has been an expert witness for various regulatory agencies including the National Energy Board, the Ontario Energy Board, and the Manitoba Public Utilities Commission. He recently testified as the chief expert witness on behalf of Coastal First Nations in the NEB Northern Gateway Pipeline hearings. He has also been an expert witness before the BC Arbitration Panel providing evidence on natural resource markets and pricing.

Dr. Gunton's works on management issues in a number of resource sectors including forestry, land use, energy, mining and fisheries. He is Chair of the Sustainable Planning Research Group and heads a research team providing advice to First Nations on impacts of oil and gas development and pipeline proposals including the Enbridge Gateway project, Kinder Morgan Pipeline and liquefied natural gas projects. He was just awarded a four year \$400,000 research grant (2014-2018) to study the impacts of liquefied natural gas on First Nations. Dr. Gunton also recently prepared a draft of the national Sustainable Development Act for the Suzuki Foundation that was passed unanimously by the Parliament of Canada in 2008. Dr. Gunton has published over 80 refereed articles in scientific journals and over 100 technical reports for private and public sector clients on resource and environmental issues and project development.

Wolfgang Haider

Wolfgang is professor at the School of Resource and Environmental Management at Simon Fraser University. He is currently its Director, and also Director of the Centre for Tourism Policy and Research. Prior to his appointment at SFU in 1998, he spent eight years as Social Research Scientist at the Centre for Northern Forest Ecosystem Services of the Ontario Ministry of Natural Resources in Thunder Bay, Ontario.

Wolfgang's research focuses on the human dimensions in resource management with a specialization in outdoor recreation and nature-based tourism, and in conservation and protected areas management. Methodologically he is well known for stated preference and choice modelling, a skill set which has proven as highly relevant to many research questions, and got him invited as collaborator to many research projects, also outside of his core area of interest. He is the principal investigator of a recently awarded SSHRC grant (almost \$500,000) on exploring non-utility maximizing utility modeling. These choice models often constitute the social component of coupled social – ecological systems, and therefore their further refinement is crucial. In this project we will develop coupled models for the recreational fishery for rainbow trout in BC, and for conservation strategies of an international migratory species, the monarch butterfly between Mexico and Ontario.

Wolfgang has authored and co-authored over 80 peer reviewed papers and book chapters, and is now in his second year as Founding Editor-in-Chief of the *Journal of Outdoor Recreation and Tourism*, published by Elsevier.

Mark Jaccard

(on Twitter @MarkJaccard and blogging at markjaccard.com)

Mark has been professor in the School of Resource and Environmental Management at Simon Fraser University, Vancouver, since 1986 – interrupted from 1992-97 while he served as Chair and CEO of the British Columbia Utilities Commission. His PhD is from the Energy Economics and Policy Institute at the University of Grenoble.

Internationally, Mark is known for his work on the Intergovernmental Panel on Climate Change (1993-96, 2008-09), the China Council for International Cooperation on Environment and Development (1994-2001, 2008-09), most recently as co-chair of a task force on sustainable coal use which reported to the Chinese Premier, and the Global Energy Assessment (2007-2012), where he served as convening lead author for sustainable energy policy. He was a member of Canada's National Roundtable on the Environment and the Economy (2006-2009) and is a research fellow at the CD Howe Institute. He has over 100 academic publications. His 2005 book, Sustainable Fossil Fuels, won the Donner Prize for best policy book in Canada. Mark was named 2008 Academic of the Year by the association of British Columbia faculty members. In 2009, he was named a Fellow of the Royal Society of Canada. In 2013, Mark gave testimony to a committee of the US Congress in Washington DC, and also appeared before parliamentary committees in the UK in London and the EU in Brussels.

His research especially focuses on the development and application of energy-economy models that simulate the likely effects of sustainable energy policies. Mark has advised governments, industry and non-government organizations around the world.

Duncan Knowler

Duncan Knowler is an ecological/environmental economist with extensive experience in the environment and development field. His activities more recently have included serving as the first Associate Dean of the Faculty of Environment. Since holding that position he has been active at the Faculty level developing international ties in China (Chinese Academy of Sciences) and India (TERI University), with support from the Vice President Externals office.

His research interests include the economics of natural resource management in developing countries, valuation of environmental resources and applied bioeconomic modeling. His research has included studies of nutrient enrichment and commercial fisheries in the Black Sea, the economics of invading species, the prospects for community wildlife management in Nepal and Mexico, the sustainability of shrimp-mangrove systems in India and valuing the preservation of fish spawning and spotted owl habitat in Western Canada. More recently, his research has concentrated on sustainable food production systems, including innovative aquaculture systems in marine environments and conservation agriculture on land. The former research is supported by a sizeable grant under NSERC's Strategic Research Network program and the latter research is anchored by a highly successful article in *Food Policy* with over 400 citations to date.

He has been involved in a number of overseas research and project preparation studies, including biodiversity-related work for the World Bank in Nepal, tribal development in India, and integrated pest management in Indonesia. He has prepared studies for the Convention to Combat Desertification (CCD), the Ramsar Convention, and several studies on sustainable agriculture for FAO, including a background paper for FAO's World Food Summit Five Year Review, held in 2002. Prior to returning to the academic world, he was employed with FAO in Rome, where he was involved in natural resource management-related project work in developing countries in cooperation with host governments and financing institutions.

Dr. Knowler teaches Ecological Economics (REM 621), Project Evaluation and Non-market Valuation Methods (REM 651), and Environment and Development (REM 656). The latter course uses an innovative "experiential" approach whereby students travel to Baja, Mexico for several weeks to attend lectures and visit sites demonstrating the principals and issues discussed in class. Finally, Dr. Knowler has recently developed a new undergraduate course, REM 200 (Introduction to Resource and Environmental Management), that will serve as the core requirement for the REM undergraduate minor and in the new Bachelor of Environment degree at the Faculty level. The course uses an innovative approach spotlighting the faculty and research groups in REM as a means of linking theory and practice in the real world.

Karen Kohfeld
(on Twitter @KarenKohfeld)

Karen is an associate professor and Tier-2 Canada Research Chair in Climate, Resources, and Global Change in the School of Resource and Environmental Management at Simon Fraser University. Her PhD is in paleoceanography from the School of Earth and Environmental Sciences at Columbia University (NY, USA). Prior to joining REM, Karen was a research scientist at Lund University (Sweden) and the Max Planck Institute for Biogeochemistry (Germany). Internationally, Karen is known for her work in Earth Systems science and global carbon cycling. She has focused on understanding the role of atmospheric dust and ocean productivity in long-term global climate change and using global datasets to test climate models. Since joining REM in 2006, Karen has formed the Climate, Oceans, and Paleo-Environments (COPE) laboratory where she also focuses on regional changes in climate and the carbon cycle. With her students and collaborators at Metro Vancouver, Fisheries and Oceans Canada, Parks Canada, and BC Hydro, she investigates how climate change is affecting extreme weather events and wind speed behavior, and how they influence upwelling, bird migration times, wind farm development and water resource management. Karen also investigates topics related to ocean acidification and climate-related shifts in fire frequency and carbon storage in terrestrial ecosystems.

Karen has contributed to the Intergovernmental Panel on Climate Change and the Millennium Ecosystem Assessment, and has been invited to co-convene or serve as keynote speaker at more than 30 international conferences and workshops, including recent invitations by the Royal Society of London and the Leopoldina German Natural Academy of Sciences. Her recent awards include a Brögger Speaker Award (Stockholm University, Sweden), and Visiting Scholar awards from Bristol University (UK) and University of Tasmania (Australia). Karen is also actively involved in mentoring young scientists. She has been a member of the Earth Science Women's Network since 2006, has mentored several students through the Mentor.net program since 2009, and has supervised more than 20 undergraduate and high school students in her laboratory since 2006.

Ken Lertzman

Ken is a forest ecologist interested in a broad range of topics related to ecosystem dynamics, conservation, and management, and has a specialty in the dynamics of temperate rainforests. He joined REM in 1989 and was Director from 2007-2010. Ken's work focuses on interactions between people and the landscapes and depend on, mostly focusing on forests and forestry. Understanding the role of natural and human disturbances in shaping forests over space and time has been a consistent theme through his career. Much of his recent and current research has a context of understanding how changing climate drives ecosystem change, much of it in relation to partnerships with coastal First Nations communities.

Increasingly Ken's work focuses on trying to understand the complex dynamics and resilience of coupled social-ecological systems. This is being applied in his collaborative, multi-disciplinary work as part of the Hakai Research Network. The Hakai Network for Coastal People, Ecosystems and Management works in partnership with First Nations and others to conduct and apply research about ecosystem-based management and sustainability on the British Columbia Coast. Ken and his students work closely with researchers from other disciplines, as well as representatives of government agencies, First Nations, industries, and other non-governmental groups in applying their research to problems in ecosystem conservation, restoration, and management. Ken is frequently called upon in an advisory capacity by government agencies, First Nations, industries, and ENGO's. He has served on a number of high-level policy advisory panels, such as the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound.

The Hakai Network was launched in September, 2010 through a partnership between SFU and the Tula Foundation and is based in the Faculty of Environment at Simon Fraser University. The Hakai Network works across many disciplines including marine, freshwater and terrestrial ecology, resource policy and planning, archaeology, and ethnobiology. The Network has a close partnership with the Hakai Beach Institute, a research station on the Central Coast of British Columbia operated by the Tula Foundation. Network affiliated faculty, post doctoral researchers and students from various universities collaborate with First Nations and community partners and researchers from other organizations on projects that focus on the ecology, sustainability, resilience and well being of the people and ecosystems of British Columbia's Central Coast. The Network has dedicated space at SFU and hosts a seminar series and many visiting researchers and community members.

Sean Markey

Sean Markey is Associate Dean, Faculty of Environment, an Associate Professor with the Resource and Environmental Management program, and an Associate with the Centre for Sustainable Community Development at Simon Fraser University. Sean's research concerns issues of local and regional economic development, rural and small-town community development, and urban and rural sustainable community planning. He has published widely in academic journals and is co-author of *Investing in Place: Economic Renewal in Northern British Columbia* (UBC Press, 2012); *Second Growth: Community Economic Development in Rural British Columbia* (UBC Press, 2005); and co-editor of *The Next Rural Economies: Constructing Rural Place in Global Economies* (Cabi Press, 2010) and *Seeds of Transition: The Convergence of the Social Economy and Sustainability* (Athabasca Press, forthcoming).

Sean is a certified planner and continues to work with municipalities, non-profit organizations, Aboriginal communities and the business community to promote and develop sustainable forms of community economic development. In addition to his regular teaching duties, he is a core instructor with the CSCD Local Living Economy Professional Certificate Program.

Sean is also actively engaged at the community level, where he serves as co-Chair on the Board of Directors with the Vancity Community Foundation, a member of the Board of the Canadian Rural Revitalization Foundation, and a long-standing member of the Board of Directors of Vibrant Surrey (2004-2011).

Jonathan Moore
(<http://moorelab.wix.com/moorelab>)

Jonathan has been an Assistant Professor at SFU since January 2011. His appointment is split between Biological Sciences and Resource and Environmental Sciences, and he holds the prestigious Liber Ero Chair of Coastal Studies and Management. His PhD is from the School of Aquatic and Fisheries Sciences at University of Washington. He has held positions at National Marine Fisheries and at University of California Santa Cruz. He has published 45 papers, has an H index of 19 (19 papers that are cited at least 19 times), and his papers have been cited 1381 times. His research has received media coverage in dozens of media outlets, such as Science Daily, The Globe and Mail, and a cover article in the Vancouver Sun. In 2014, he was awarded the J.C. Stevenson Memorial Lecture, a Canada-wide award given once a year to a “young, energetic, and creative researcher at the cutting edge of an aquatic discipline”.

Jonathan’s research primarily focuses on the biodiversity, resilience, and management of rivers, from headwaters to estuaries. Much of his research focuses on Pacific salmon and their fisheries. His research approach is multi-pronged, joining the clarity and insight of modeling, the power of innovative statistical techniques and big data, and the reality of complex natural environments. His network of collaborators includes academics, First Nations, and Provincial, and Federal partners. He also actively works to improve capacity and communication with regards to natural resources management. For example, he helped design and implement a new Canadian postdoctoral research program for conservation science (current role: scientific advisory board, 2013-present). His overarching goal is to generate and communicate scientifically robust and sound information to inspire and inform change in aquatic environmental policy and decision making.

Evelyn Pinkerton

Evelyn has been a professor the School of Resource and Environmental Management at Simon Fraser University, Vancouver, since 1996. As a maritime anthropologist, she has been leading the co-management research group which analyzes the conditions under which fishing communities and organizations are successful in sharing power with government agencies in management decisions.

Her graduate students are supported by three grants (soon to be four when SSHRC is allowed to announce its results) in which she is either the principle investigator or a co-investigator. These research projects involve students both in multi-disciplinary research and also in partnerships with national, provincial, and local-level fishermen's organizations. They also have weekly meetings with UBC students and are currently preparing a student session at the 2nd World Congress on Small-Scale Fisheries in Merida, Mexico in September. She also funded three REM colleagues and two UBC colleagues in research on BC community forests, whose results are still being published.

Evelyn has published over 50 peer-reviewed papers/books/major reports, and is co-editing a special issue of the journal *Marine Policy* on the impact of neoliberal policies on North American small-scale fisheries. At the national level, she has testified before the Canadian Senate Committee on Fisheries, was invited to testify before the Subcommittee on Insular Affairs, Oceans, and Wildlife, US House of Representatives, has been interviewed on Canadian radio and TV programs, and has been an invited keynote speaker at many universities and conferences. At the local level she has written many newsletter articles for tribal and community organizations which report on research results in easily understandable language.

Mark Roseland

Mark is professor of planning in REM. From 1993-95, immediately following completion of his PhD in UBC's School of Community & Regional Planning, he started his SFU career as a limited term professor in REM. After a 15-year hiatus serving as professor in SFU Geography, Mark returned to REM in 2010. Mark has been professor and director of the SFU Centre for Sustainable Community Development (CSCD) since 1997.

Mark lectures internationally and advises communities and governments on sustainable development policy and planning. The 4th edition of his best-selling book *Toward Sustainable Communities* was published in June 2012 and released at the ICLEI – Local Governments for Sustainability 2012 World Congress and International Researchers Symposium, associated with the Rio+20 Earth Summit. Mark is also leading development of Pando | Sustainable Communities, a network for sustainable communities researchers and practitioners, launched as well at Rio+20.

Mark has been cited by the *Vancouver Sun* as one of Vancouver's "top 50 living public intellectuals," and he was the 2012 recipient of the SFU Sustainability Network Award for Excellence in Research on Sustainability. In 2013 Mark took a leave from SFU to serve a short term as chief City Planner for the City of North Vancouver. He returned to SFU in January 2014.

At SFU, Mark was one of the architects of the Faculty of Environment (FENV), having served on the committees that designed the Faculty. As director of CSCD, Mark is a charter member of the Dean's Advisory Committee in FENV (since 2009). Mark is also a founding member of the SFU Community Trust's Board of Directors (since 1999), responsible for the award-winning UniverCity sustainable community development project.

Mark's research and professional interests include planning practice, sustainable community development, community and regional economic development, planning theory, and planning pedagogy. His current international activities include efforts to create a human settlements goal within the UN's post-2015 Sustainable Development Goals.

Murray Rutherford

Murray is an associate professor in REM and has been with the department since 2001. He is Chair of the REM Graduate Studies Committee, and he teaches environmental law, public policy, environmental impact assessment, and water planning and management. Murray's PhD is in environmental policy from the School of Forestry and Environmental Studies at Yale University. Earlier degrees include an MRM from SFU and a B.Sc. (geology) and LL.B. (law) from UBC. Before his academic career, he was a partner in a major law firm. Murray's research examines human dimensions of environmental policy and planning; specifically, the values, perspectives, and institutions that shape and govern human relationships with the environment. Current research focuses on three main areas:

Policy and Planning for the Conservation of Species and Ecosystems

- Co-edited and contributed chapters to two books on large carnivore conservation policy. The most recent was published this year (May 2014) by the University of Chicago Press: Clark, S.G., and M.B. Rutherford, (eds.), *Large Carnivore Conservation: Integrating Science and Policy in the North American West* <http://press.uchicago.edu/ucp/books/book/chicago/L/bo17494925.html>. Other notable publications include an article on grizzly bear policy in the Banff/Bow Valley that was awarded the Harold D. Lasswell prize by the journal *Policy Sciences*, and an article in *Conservation Biology* on perspectives on grizzly bear conservation.
- Other recently published research in collaboration with REM students and faculty includes studies of marine planning in Canada, planning for First Nations' Conservancies, and planning and private title on First Nations' reserves.
- Ongoing research includes several papers on herring management policy, in collaboration with REM students and SFU's "Herring School."
- Initiated a new project this summer with a REM PhD student who will examine forest practices and conservation planning in the Great Bear Rainforest.

Water planning and management

- Recent research in collaboration with REM students and faculty includes a book chapter on drinking water management in community forests (in review), and an article on perspectives on grey-water recycling (in process).
- Ongoing studies with REM students include an evaluation of the Coquitlam River Watershed Planning Roundtable and an analysis of stormwater management options for Victoria (both projects conducted in collaboration with local municipalities).
- Murray is also faculty supervisor for the REM Water Research Group (organized and managed by REM PhD students Steve Conrad and Cedar Morton).

Environmental impact assessment

- Contributed a chapter on BC's environmental impact assessment process for a book on environmental impact assessment in Canada.
- Currently collaborating on papers evaluating the environmental assessment processes for the Northern Gateway pipeline and for projects in Alberta's oil sands.
- Co-investigator for a new multi-year project, in collaboration with the Metlakatla First Nation and REM faculty and students, on assessing the cumulative effects of

proposed projects (LNG, etc.) in Metlakatla traditional territory in northwestern BC
(funded by a MITACS cluster grant).

Anne Salomon
(<http://cmeclab.com/>)

Anne is an applied marine ecologist and has been an assistant professor in the School of Resource and Environmental Management at Simon Fraser University since 2009. Anne has dedicated her career to advancing and informing ecosystem approaches to marine conservation. Anne's research program lies at the nexus of community and ecosystem ecology, anthropology, archaeology and marine conservation policy. Her research has revealed insights into the cascading effects of predator depletion, alternative state dynamics in kelp forest ecosystems, marine reserve design, and the factors that confer resilience to social-ecological systems.

Understanding the dynamics of coupled human-ocean systems at the broad temporal and spatial scales germane to conservation and management necessitates a combination of approaches. To meet this challenge, Anne fosters research partnerships with natural and social scientists, takes an interdisciplinary approach to much of her work, and uses a combination of tools, including manipulative field experiments, large-scale regional surveys, quantitative models, stable isotopes, satellite remote sensing, archeological data, historical records and traditional knowledge to tackle the foremost challenges facing coastal systems today.

Over her career, Anne has published 28 peer-reviewed publications including, 23 journal articles, 4 book chapters and one award-winning book. Her research has been recommended by Faculty of 1000 twice, and featured in *Nature* magazine and over 23 media outlets, including national public radio, TV and newspapers in both Canada and the US. In 2013, Anne was awarded a Pew Fellowship and the International Recognition of Professional Excellence (IRPE) Prize for publishing 'uniquely independent, original and/or challenging research representing an important significant breakthrough' as an early career scientist.

Anne is a strong advocate for science-based ocean policies and practices and thus has been actively involved in marine conservation science and policy for over 10 years, most recently as a board member of the Society for Conservation Biology's marine section, a member of World Wildlife Funds' Pacific Advisory Council, and as a science advisor for multiple marine spatial planning and ecosystem-based management initiatives in British Columbia, Canada, California, and Alaska. Anne is currently a science advisor for Stanford University's Center for Ocean Solutions' Ocean Tipping Points Project and a principle investigator with the Hakai Network for Coastal People, Ecosystems and Management, an innovative interdisciplinary partnership with coastal indigenous communities in British Columbia aimed at devising solutions to pressing coastal conservation problems.

John Welch

John is an applied and social archaeologist who works with indigenous communities on projects at the interface of anthropology, archaeology, and resource management. Current projects center on practical issues at the interface of indigenous peoples' sovereignty—rights and responsibilities derived from authority over people and territory—and stewardship—sustainable and broadly beneficial uses of sociocultural and biophysical inheritances.

Since the mid-1980s, when John began working on White Mountain Apache Tribe lands, his career has been dedicated to facilitating research and outreach partnerships with tribes in upland Arizona and New Mexico, as well as First Nations in coastal British Columbia. John served as the resident archaeologist and historic preservation officer on Apache lands from 1992 to 2005, when he moved to Vancouver to take up a Canada Research Chair (tier 2) in First Nations heritage stewardship.

John continues on the board of the Fort Apache Heritage Foundation, a tribally chartered non-profit he helped to found in 1997 and authored and defended the successful nomination of the Fort Apache and Theodore Roosevelt School district as a U.S. National Historic Landmark. John serves as a member of the steering committee for the Intellectual Property issues in Cultural Heritage project (also known as, IPinCH), an SFU Archaeology-based MCRI entering its final year.

John's current research partnership with Jemez Pueblo (New Mexico), funded by the U.S. National Science Foundation, is a policy-focused investigation of a millennium of human-ecosystem dynamics on the heavily forested slopes of the Jemez Plateau west of Santa Fe. The project is integrating archaeology, indigenous oral traditions, and dendroclimatology to understand how large indigenous communities flourished for centuries in fire-adapted pine forests, how these forests have, since the introduction of livestock and industrial forest management become prone to catastrophic, landscape-altering wildfires.

The overarching goal of all these partnerships is to harmonize local community, academic and public policy interests in the respectful use and protection of landscapes, items and intangible associations that endow people with cultural orientation and vitality, as well as ecosystem services.

Peter Williams

Peter is an educator, planner, and researcher who has worked for three decades on projects related to sustainable tourism development in Canada and abroad. As a educator, he teaches tourism policy and planning courses for academic and professional audiences within REM, Continuing Studies, and beyond. His highly interactive and dialogic-based approach to teaching and learning has led him to an ongoing flow of workshop, seminar and field-based learning assignments with tourism practitioners and students around the globe. Many of the graduate students he has supervised have assumed academic, government, private sector, or community leadership roles related to their educational experiences with him and other REM faculty members.

As a professional planner, he works with government agencies, industry associations and communities on issues related to the development, marketing and on-going management of tourism destinations. These projects have helped shape strategic policy and planning decisions influencing the development of winter sport, nature based, wine, cultural, aboriginal, and agricultural and cruise ship tourism destinations in BC and other regions of Canada.

As a researcher and former Director of the Centre for Tourism Policy and Research at Simon Fraser University, he has coordinated the completion of many research projects designed to create more resilient and sustainable forms of tourism development. Conducted primarily by supervised REM graduate students, most of these projects have focused on various tourism aspects of policy formation, product-market matching, environmental management, mega-project impact assessment, corporate social reasonability, and destination governance. Collectively, these community and industry centric projects and others conducted by REM faculty have helped keep REM and its tourism graduate students in tune with the pulse and research needs of tourism organizations in BC and elsewhere. Reciprocally, these efforts have helped position REM and its Centre as the 'go-to' university for cutting edge tourism research in BC, and one of the top academic tourism institutes in North America. This position is reinforced by many formal awards bestowed by industry and academic organizations for the quality of the research produced.

Dr. Williams has served on many tourism related academic and industry advisory boards over the years. He currently, is a Lifetime Honorary Member of the Travel and Tourism Research Association, a Fellow of the Canadian Royal Geographic Society, a member of the International Academy for the Study of Tourism, and a Board member of the International Association of Scientific Tourism Experts.