

Energy & Environment Research Expertise Cluster

Last updated January 2013

College	Unit	First	Last	Expertise
Business	Economics	Stephen	Brown	Energy Economics and Policy; Global Warming; Energy Security; Energy System Modeling; Regional Economic Growth
		Constant	Tra	Environmental Economics; Natural Resource Economics; Urban and Land Use Policy
		Mary	Riddel	People's Willingness to Pay for Environmental Improvements; Climate Change; Nuclear Waste Transport and Storage
Education	Teaching & Learning	Janelle	Bailey	Science Education; Astronomy Education; Professional Development; Preservice Science Teacher Education; Evaluation
Education	Educational Research, Cognition & Development	Michael	Nussbaum	Thinking and Discourse; Argumentation; Critical thinking; Science/Climate Change Education
Engineering	Mechanical	Robert	Boehm	Renewable Energy; Thermal System Design
		Yitung	Chen	Computational Fluid Dynamics; Heat and Mass Transfer; Nuclear and Renewable Energy; Hydrogen Production and Utilization
		William	Culbreth	Nuclear Engineering; Aerodynamics; Experimental Fluid Mechanics and Heat Transfer
		Samir	Moujaes	HVAC; High Temperature Hydrogen Production; Thermal Issues in High Level Nuclear Waste; Air Duct Leakage

		Darrell	Pepper	Computational Fluid Dynamics; Heat Transfer; Wind Energy/Renewable Energy; Groundwater Flow; Aerospace including UAV
		Hui	Zhao	Micro and Nano Fluidics; Lab-On-Chip Technology; Nanotechnology and Micro/Nano Energy Conversion; Energy Storage
Engineering	Mechanical	Denis	Beller	Nuclear Engineering; Reactor Physics; Nuclear Criticality Safety; Neutron Detection; Nonproliferation; Nuclear Security
		Jian	Ma	Thermal Fluid Sciences; Process/System Engineering and Renewable Energy Systems
		Rick	Hurt	Renewable Energy Research Specialized in Solar Power Generation
		Daniel	Lowe	Radiation Transport Modeling; Large Scale Computing; Active Interrogation Techniques
		Robert	O'Brien	Radiation Detection; Radiation Transport; Unmanned Aerial Systems
		Alexander	Barzilov	Nuclear Engineering; Radiation Applications; Radiation Detectors; Nondestructive Analysis of Materials; Modeling of Physical Processes
		Kwang	Kim	
Engineering	Electrical & Computer	Yahia	Baghzouz	Electrical Power Conversion; Renewable Source Grid Interconnection; Power Efficiency; Fuel Cell Integration
		Biswajit	Das	Nanotechnology; Solar Cells; Spintronics; Sensors

		Robert	Schill	Electromagnetics; Plasma Physics; Pulsed Power; Microwaves and Optics
		R. Jacob	Baker	Design flow and Techniques for Fabricating Safe and Secure (trusted) Integrated Circuits; Investigating 3D Packaging and Capacitive Interconnects to Reduce Power Consumption in Semiconductor Memories; Chip-Scale Methods to Implement Chemical and Biological Sensors using CMOS; Design of Readout Integrated Circuits (ROICs) for use with Focal Plane Arrays (FPAs); Heterogeneous Integration of III-V Photonic Devices with CMOS; Analog and Mixed-Signal Circuit Design for Communication Systems, Synchronization, and Data Conversion; Design of Writing and Sensing Circuitry for Emerging Nonvolatile Memory Technologies, Focal Planes, and Displays (arrays); Re-Configurable Electronics Design using Nascent Memory Technologies; Finding an Electronic (no mechanical component) Replacement for the Hard Disk Drive using Nascent Fabrication Technologies; Methods to Deliver Circuit Design Education to Industry and Off-Campus Students
		Ke-Xun (Kevin)	Sun	Optics; Interferometry; Lasers; Electronics; High Energy Density Physics; Diagnostic Instruments; Space Instruments
Engineering	Civil & Environmental	Donald	Hayes	Surface Water Quality Modeling; Remediation of Contaminated Sediments; Wetland/Ecological Engineering; Water Resources Systems
		Sajjad	Ahmad	Water Resources Planning; Surface Water Hydrology; Climate Variability; Flood Forecasting; Remote Sensing Applications

		Jacimaria	Batista	Water/Wastewater Treatment; Perchlorate Treatment; Mining Reclamation; Absorption Processes; Energy Use in Water Treatment
		Barbara	Luke	Geotechnical Engineering; Geophysical Engineering; Seismic Site Characterization; Geotechnical Earthquake Engineering
		Haroon	Stephen	Microwave Remote Sensing; Geographic Information Systems (GIS); Data Visualization; Land Scatterometry and Radiometry; Water Resources
		David	James	Paved Road and Vacant Land PM10 Emissions; Solar Distillation; Dust Control; Engine Start Monitoring; Water Quality
		Thomas	Piechota	Surface Water Hydrology; Storm Water Quality in Urban Environments; Hydroclimatology; Water Resources Planning; Geographic Information
		Daniel	Gerrity	Water and Wastewater Treatment; Indirect Potable Reuse (IPR) and Direct Potable Reuse (DPR); Advanced Oxidation Processes (AOPs); Trace Organic Contaminants (TOrcs); Environmental Microbiology and Disinfection; Online Monitoring of Advanced Treatment Processes
Fine Arts	School of Architecture	Kenneth	McCown	Urban Design; Sustainability; Architectural Design; Landscape Architectural Design; Watershed; Ecosystem; Infrastructure and Environmental Planning; Photography
Greenspun Urban Affairs	School of Environmental and Public Affairs	Jaewon	Lim	Economic Development (both in academic research and practice); Economic Impact Analysis (various types of economic and industrial activities); Investment on State and Local Governments

		Erica	Tietjen	Freshwater Ecology/Biology; Microbial Ecology; Decomposition Processes; Aquatic Invasive Species
		Jasmine	Waddell	Disaster Studies including Roles of Civil Society in Disaster; Poverty and Social Exclusion; Resilience Studies; Vulnerability Studies; Sustainable Development; Environmental Policy including Climate Change; Gender and Human Rights; Qualitative Methods
		Helen	Neill	Environmental Economics; Energy Economics; Economic Valuation; Housing Market Analysis; Sustainable Real Estate; Assessment
		Krystyna	Stave	Public Participation in Environmental Decision Making; Environmental Systems Analysis; System Dynamics Modeling
Liberal Arts	Sociology	Robert	Futrell	Environmental Sociology; Social Movements; Sociology of Science and Technology; Sustainability; Sport
Libraries	Library	Marianne	Buehler	Scholarly Communication and Sustainability
School of Allied Health Sciences	Health Physics and Diagnostic Sciences	Gary	Cerefice	Radioactive Waste Management; Nuclear Engineering; Nuclear Fuel Cycle; Nuclear Safeguards; Radiation Safety; Health Physics
		Ralf	Sudowe	Development of Radiochemical Separations and Radioanalytical Techniques; Behavior of Radionuclides in the Environment
School of Community Health Sciences	Environmental and Occupational Health	Shawn	Gerstenberger	Environmental Toxicology; Environmental Health; Children's Health; Metal Toxicity
		Scott	Abella	Natural Resources Management; Conservation; Environmental Science; Restoration Ecology; Botany; Science Synthesis

School of Community Health Sciences		David	Wong	Ecosystem Health; Invasive Biology; Pollution Ecology
School of Law		Bret	Birdsong	Environmental, Natural Resources, Public Land, and Water Law
Sciences	School of Life Sciences	Penny	Amy	Microbiology
		Andrew	Andres	Molecular Genetics
		Dennis	Bazylinski	Microbiology; Biomineralization; Nanotechnology; Biogeochemistry
		Dale	Devitt	Soil and Water Science
		Michelle	Elekonich	Animal Behavior; Honey Bees; Stress, Aging, and Behavioral Endocrinology
		Allen	Gibbs	Evolution; Metabolism; Functional Genomics; Environmental Physiology
		Brian	Hedlund	Microbial Ecology
		David	Lee	Comparative Biomechanics
		Laurel	Raftery	Developmental Biology
		James	Raymond	Adaptation of Microorganisms to Icy Environments
		Carl	Reiber	Physiology
		Brett	Riddle	Biogeography; Molecular Systematics; Mammalogy; Phylogeography; Conservation Biology
		Eduardo	Robleto	Microbiology; Bacterial and Molecular Genetics

	Javier	Rodríguez	Biology of Amphibians and Reptiles; Biogeography; Evolutionary Ecology; Feeding Ecology; Genetic Divergence; Systematics	
	Martin	Schiller	Bioinformatics; Neurobiology; Biochemistry; HIV; Molecular Biology	
	Paul	Schulte	Plant Physiology	
	Jeffery	Shen	Bioinformatics; Plant Molecular Genetics; Biofuel; Hormone Signaling Networks; Abiotic Stress	
	Stanley	Smith	Desert Ecology and Global Change	
	Lloyd	Stark	Bryophyte Desiccation Tolerance and Reproduction	
	Peter	Starkweather	Aquatic Ecology	
	Daniel	Thompson	Evolution; Ecology; Population Genetics	
	Frank	van Breukelen	Mammalian Physiology	
	Lawrence	Walker	Plant Ecology; Disturbance Recovery; Restoration	
	Helen	Wing	Bacterial Pathogenesis and Gene Regulation	
	Robert	Winokur	Anatomy; Herpetology; Histology and General Zoology	
	Jef	Jaeger	Conservation Biology; Wildlife Ecology	
	Phillippos	Tsourkas		
Sciences	Physics and Astronomy	David	Jeffrey	Theoretical Astronomy (with particular interests in supernovae and astrophysical radiative transfer)

Changfeng	Chen	Condensed Matter Theory
John	Farley	Lasers; Spectroscopy; Corrosion; Materials; Global Warming
Victor	Kwong	Atomic Processes in Plasmas
Stephen	Lepp	Atomic and Molecular Theory
Tao	Pang	Condensed Matter Theory
James	Selser	Static and Dynamic Light Scattering from Macromolecular Systems
David	Shelton	Nonlinear Optical Properties of Atoms and Molecules
Bing	Zhang	High Energy Astrophysics
Bernard	Zygelman	Computational Physics, Atomic and Molecular Theory
Andrew	Cornelius	High Pressure Condensed Matter Experiment
Kentaro	Nagamine	Astronomy; Astrophysics; Cosmology; Galaxy Formation; Numerical Simulation
Michael	Pravica	Condensed Matter Experiment; High Pressure Techniques; Nuclear Magnetic Resonance; Raman and Infrared Spectroscopy
Daniel	Proga	Theoretical Astrophysics; Fluid Dynamics; Numerical Simulations
George	Rhee	Extragalactic Astronomy
Diane	Smith	Stellar Photometry and Spectroscopy

		Lon	Spight	Cosmology and Interacting Galaxies
Sciences	Mathematical Sciences	Charles	Davis	Statistical Analysis for Environmental Regulatory Applications and Statistics Related to Chemical and Radiological Laboratory Analyses
Sciences	Geoscience	Michael	Wells	Tectonics; Structural Geology; Microstructural Analysis; Thermochronology
		Brenda	Buck	Medical Geology; Dust; Soil Science; Geomorphology
		Pamela	Burnley	High Pressure Rock Deformation; Mineral Physics; Metamorphic Petrology; Geoscience Education
		Jean	Cline	Economic Geology and Geochemistry
		Andrew	Hanson	Stratigraphy; Basin Analysis; Petroleum Geology; Organic Geochemistry
		Elisabeth	Hausrath	Soil-Forming Processes; Water-Rock Interaction; Chemical Weathering; Mars Geochemistry; Biogeochemistry
		Ganqing	Jiang	Sedimentary Geology and Stable Isotope Geochemistry; Deep-Time Paleoclimatology
		Gabriel	Judkins	Human-Environment Interactions; Environmental Degradation; Land-Use; Free Trade Agreements; Remote Sensing
		David	Kreamer	Hydrogeology; Contaminant Transport by Groundwater; Hydrology; Developing Nations; Climate Change

Matthew	Lachniet	Quaternary Geology; Paleoclimatology; Isotope Geochemistry
Rodney	Metcalf	Metamorphic and Igneous Petrology; Geochemistry
Michael	Nicholl	Vadose Zone Hydrology; Environmental Fluid Mechanics; Geological Engineering
Scott	Nowicki	Planetary Geology; Geomorphology; Environmental Modeling; Remote Sensing; GIS
Margaret	Rees	Sedimentology; Stratigraphy; Feminist Geoscience Education
Stephen	Rowland	Paleontology; Pleistocene Paleontology; History of Geology
Adam	Simon	Economic Geology; High-Temperature Geochemistry
Eugene	Smith	Igneous Petrology; Volcanology; Geochemistry; Geologic Mapping
Terry	Spell	Geochronology and Volcanology
Wanda	Taylor	Structural Geology; Extensional and Contractual Tectonics
Sylvia-Monique	Thomas	High-Pressure/High-Temperature Mineral Physics; Rock Deformation; Mineral Spectroscopy; 'Water' in Minerals and Glasses
Oliver	Tschauner	High-Pressure Experimental Physics
Zhongbo	Yu	Hydrogeology; Hydrology; Climate Change

Sciences	Chemistry	Joshua	Bonde	Paleontology and Taphonomy of Organisms
		Dennis	Lindle	Physical Chemistry, Atomic and Molecular Physics
		Ernesto	Abel-Santos	Anthrax; Bioterrorism; Hospital-Acquired Infections; Animal Infections
		Pradip	Bhowmik	Organic and Polymer Chemistry
		Kenneth	Czerwinski	Radiochemistry; Nuclear Forensics; Nuclear Fuel Cycle; Radiopharmaceuticals; Radiochemistry Education
		Paul	Forster	Materials Chemistry
		David	Hatchett	Materials; Electrochemistry; Analytical Chemistry
		Clemens	Heske	Surface and Interface Characterization; Materials for Energy Conversion
		Vernon	Hodge	Environmental and Analytical Chemistry
		Gary	Kleiger	Biochemistry and Structural Biology
		Dong-Chan	Lee	Organic Materials Chemistry
		Balakrishnan	Naduvath	Physical and Environmental Chemistry
		Kathleen	Robins	Physical Computational Chemistry
		Spencer	Steinberg	Environmental and Organic Chemistry
Lawrence	Tirri	Biochemistry		
James	Worman	Organic Chemistry		

Frederic Poineau

Wayne Stolte

Atomic and Molecular Chemistry and Physics;
Synchrotron Radiation; Nano-Science; Materials
Science related to Solar Cells

Timo Hofmann

Yeong-Beom Lee

Jongwon Park

Hong Sun