1865 THE UNIVERSITY OF MAINE

CLIMATE CHANGE INSTITUTE
FY2018 Annual Report

Research Activity for the period
July 1, 2017 - June 30, 2018

Annual Report - FY 2018

Research Activity for the period of July 1, 2017 to June 30, 2018

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i. Executive Summary

Major Accomplishments

Climate change is a major security issue for our country and the world and a defining element for the 21st century. It impacts human and ecosystem health, the economy, causes geopolitical stress, and increases the likelihood of storms, floods, droughts, wildfires and other extreme events. The Climate Change Institute and climate in general is recognized as a Signature Research area in the University of Maine. CCI has a legacy of transformational contributions to the understanding of the physical, chemical, biological and social interfacing of climate change and the application of these findings at local to international scales. To this end the Institute has launched a conceptual framework for developing climate change adaptation and sustainability planning that includes continually enhanced, publicly available software to understand past, present and future changes in climate and vulnerability to climate change through the formulation of plausible scenarios for the prediction of annual to multi-decadal scale climate change. This framework now forms a primary initiative for CCI entitled Climate Futures. Within this framework CCI is undertaking plausible scenario climate planning for Maine and several other regions such as: West Africa, the Southern Hemisphere, and Central Asia. In addition, CCI developed an Arctic Futures Institute in collaboration with the UM Law School and the World Ocean Observatory. This activity is intended to provide a focal point for understanding and applying the complex interaction of physical, chemical, biological, social, business, policy and law associated with Arctic warming and implications for Maine and the Northern Hemisphere.

CCI continues to maintain its high level of research funding, return on indirect, publications, state, national and international collaboration, outreach and its role as the focal point for the University of Maine's climate change research excellence. Examples for the current reporting year follow. CCI is currently involved in 107 research grants and contracts. Return on investment remains high at $7.52. Research productivity is summarized in the form of peer-reviewed publications (214), chapters (14) and books (2). CCI provides a climate change medium for several academic units at the university (eg., Schools of Earth and Climate Sciences, Marine Sciences, Biology and Ecology, Business, Department of Anthropology), and interacts with State of Maine agencies (eg., Department of Environmental Protection, Department of Conservation, Forestry and Agriculture, Department of Transportation, Maine Geological Survey, Maine Inland Fisheries and Wildlife, Maine Center for Disease Control, Department of Licensing and Regulatory Services), federal agencies (eg., Environmental Protection Agency, Department of the Interior, National Park Service, US Department of Agriculture, US Forest Service, Natural Resource Conservation Service, US Department of Commerce, National Oceanic and Atmospheric Administration; Maine-based non-governmental organizations (eg., Blue Hill Heritage Trust, Friends of Acadia, Maine Lakes Society, Maine Audubon), and both national (eg., Harvard, Princeton, Dartmouth, University of Washington, University of Colorado) and international research organizations (eg., Scientific Committee for Antarctic Research, United Nations, Victoria University (New Zealand), Universidade Federal do Rio Grande do Sul (Brazil), Magallanes University (Chile), Australian National University, Heidelberg University and Alfred Wegener Institute (Germany). CCI has a long tradition of outreach through various media venues, public talks, popular articles, and web-based software with the most prominent example being Climate Reanalyzer.

Highlights (examples)

- CCI continues to maintain its legacy of field expeditions throughout Maine, the United States,

Antarctica, Greenland, Europe, South Amerca and Asia and as a consequence offering the more than 50 graduate students supported by CCI faculty research grants the opportunity to experience on the ground research and career changing experiences.

- CCI's eleven research laboratories continue produce high quality data leading to transformational scientific discoveries.
- CCI's Climate Reanalyzer™ software continues to attract 3000-4000 electronic visits per day from major media sources, researchers and the public.
- Climate Futures is addressing, through private funding, coastal Maine climate change prediction and application.
- CCI-Harvard Science of the Human Past collaboration is redefining "natural" levels of lead in the atmosphere calling for stricter lead abatement standards (>50 media stories worldwide).
- CCI faculty have been awarded many new grants including a NSF early career grant.
- CCI faculty and student continue to be honored for their accomplishments.
- Arctic Futures Institute collaboration is focusing on the convergence of science, law, policy, business, and outreach in response to abrupt Arctic warming.
- CCI social climate researchers and students are engaging in climate change science and policy activities at the United Nations Conference of Parties in Bonn, Germany.
- Advanced technology and big data handling innovations continue to emerge from CCI.

I. Serving Maine (examples)

A. Community Engagement

CCI standardly provides lectures and other services to K-12, colleges and universities, public, governmental and non-governmental audiences in addition to conducting environmental monitoring of lakes, forests, coastal areas and ecosystems. Examples are presented in the form of media coverage to demonstrate the public reach and application of selected CCI activities:

- E2Tech "Economic impacts of climate change" keynote and panel lead in Portland (Dr. Fernandez).
- Written testimony" Climate change and greenhouse gases" before Maine Department of Environmental Protection Rulemaking Meeting (Dr. Fernandez).
- News Center interview re Maine's tick season (grad student Elias and Dr. Maasch).
- NEXT Radio interview re storm surge/sea level rise along the coast of New England (Dr. Mayewski).
- CCI's 26th Annual Borns Symposium – an American Geophysical Union style conference focused on grad student presentations and posters with ~100 people this year.
- Camden Conference climate simulation (grad students Kochtitzky and McGinn).
- Bangor Daily News Op Ed (Dr. Fernandez) "We cannot afford to leave science out of policy".
- A video entitled: Ice Core, Memory of the Planet featuring the research of Dr. Mayewski produced for the CHATTERMARK website.
- Washington Post and The Atlantic feature Climate Reanalyzer (Dr. Birkel).
- Bangor Daily News "Flooded bear dens" (Dr. Birkel).
- Coordinating conservation efforts on Maine mountaintops (Dr. MacKenzie).
- BDN OpEd on climate change (Drs. Tisher and Borns).
- BDN – "Chances of another storm" (Dr. Birkel).
- Press Herald – Lyme disease (grad student Elias and Dr. Birkel).
- Chicago Herald, Detroit News, Portland Press Herald – report on Arctic blast (Dr. Birkel) and Discover Magazine.
- BDN Op Ed on national parks (Dr. MacKenzie).
- BDN report on shell midden research (Dr. A. Kelley) and Working Waterfront.

- Republican Journal cites climate and weather workshop series for teachers (Dr. Schauffler).
- Connections between art and environment in the modern world (Dr. J. Kelly) Portland.
- CNET article on extinction and genetically modified animals (Dr. Gill).
- K-12 online data visualization and analysis platform for teachers and students climate.tuvalabs.com (Dr. Schauffler).
- Portland Press Herald article on climate refugees (Drs. Strong, Mayewski, Isenhour).
- One Health Initiative and Lyme disease (CCI grad student Elias).
- Fresh Air NPR interview reports Gulf of Maine summers getting longer and stronger (Dr. Thomas).
- Mount Desert Islander Food Waste discourse (Dr. Isenhour).
- BDN interview re droughts and record rainfall (Dr. Birkel).
- USDA announces climate adaptation funding (Dr. Fernandez).
- PRI – the World – Necessity to do Climate Research (Dr. Mayewski).
- BDN reports above average precipitation over winter and spring (Dr. Birkel).
- Art of Climate Science – a two-month exhibition at UM Hutchinson Center Belfast (CCI grad students and faculty).
- Reuters cites CCI data re Northern Hemisphere heat wave.
- Science teacher's workshops and conferences (Drs. Schauffler and Lyon).

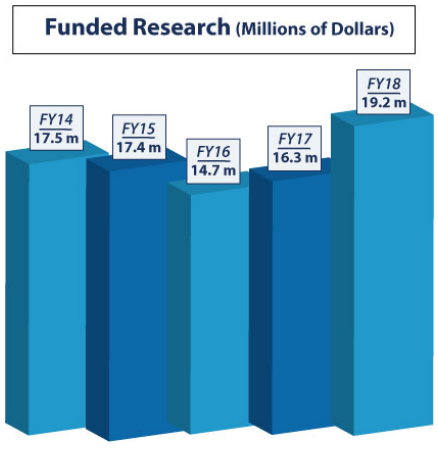
B. Economic Development
- Climate Reanalyzer featured at UN Climate negotiations (Drs. Birkel, Strong, Isenhour, CCI grad students Kochtitzky and McGinn).
- Climate Futures planning framework on-going for Maine with emphasis on the impact of Arctic warming on Maine's climate and economy.

C. Workforce Development
- Activities are currently on-going to provide local and broader based plausible climate predictions including the impact of climate change on Maine's commodities. This information is essential to planning for future workplace development and opportunities. Some of this planning has been undertaken as part of a joint CCI-UM Business School course (BUA 645).

D. One University Initiatives
- CCI has a long history of collaboration within the University of Maine (currently with 20 units), within Maine (currently with 35 entities), nationally (currently with >25 institutions) and internationally (currently with >30 countries). As part of the evolving One University initiative CCI collaborates with the University of Southern Maine (e.g., "Arctic Showcase") and the University of Maine Law School (e.g., joint BUA course and the Arctic Futures Institute).

II. Financial Sustainability

A. Research Funding: Submitted & Awarded, Trends (Appendix A)



B. Intellectual Property Generation (NA)
C. Revenue Generated (NA)
D. Private Giving/Alumni Cultivation
Dan & Betty Churchill Fund, The William Bingham Foundation, Muharram & Barbara Gokcen Fund, Russell Grinnell Memorial Trust, Quesada Fund
E. Initiatives to Increase Fiscal Efficiency
CCI discontinued base phone service for all CCI graduate students several years ago; all toll calls related to research are debited to grants; CCI built three web conferencing facilities for <$1000 each that are used regularly for national and international meetings, courses and conferences.
F. Other

III. Culture of Excellence

A. Faculty Mentoring and Professional Development

i. Mentoring of Junior Faculty
- CCI has 20 early career faculty and post-doctoral fellows – all are reviewed regularly and all are proceeding well in their career paths. Several were promoted and tenured this year.

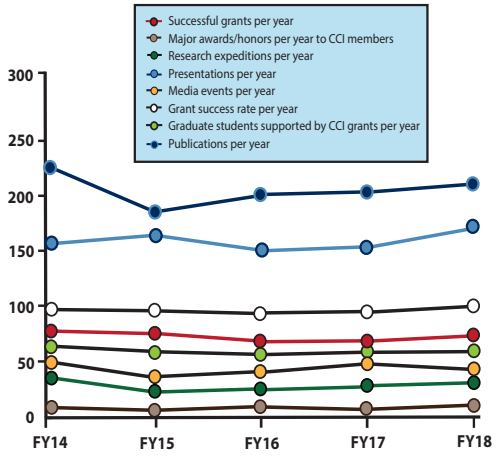
ii. Mentoring of Post-Tenure Faculty
- Most post-tenure CCI faculty are active researchers so mentoring is mostly closely associated with either research advice and/or collaborative research efforts.

iii. Evidence of Effectiveness of Mentoring Program
- CCI faculty have strong records of research funding, productivity, and considerable grad student involvement in research.

iv. Examples of Outstanding Mentoring Initiatives
- Nothing to report.

B. Faculty Achievements (major examples)
- 2018 Presidential Public Service Achievement Award (Dr. Fernandez).
- 2018 NSFA Outstanding Research Award (Dr. Saros).
- 2018 CLAS Outreach and Service Award (Dr. Isenhour).
- 2018 National Geographic Society Expedition Science Leader and Senior Advisor (Dr. Mayewski).
- Science magazine names recovery of ancient ice runner-up for 2017 Breakthrough of the Year (Princeton and CCI Drs. Kurbatov, Mayewski, post-doc Spaulding, grad student Clifford).
- Press Herald "Mainers of the Year" (Dr. Gill).
- Environmental Research Letters selected: "Temperature suitability for malaria climbing the Ethiopian Highlands" by (Dr. Lyon et al.) for its Highlights of 2017 collection.

C. Research and Scholarship Summary (see figures below demonstrating sustained success)



2018 CCI Annual Report - Research Grant Breakdown

	FY2017		FY2018	
TOTAL AWARDS includes New, Supplemental, Continuation, and Preproposal Grant Submissions & Awards	*Total Awards* $42,777,041	*Count* 133	*Total Awards* $37,599,760	*Count* 146
Pending Grant Submissions	$22,408,440	45	$16,808,334	34
Declined/Rejected Grant Submissions	$3,993,701	15	$1,545,295	5
Withdrawn Grant Submissions	$0	0	$0	0
New Grants Awarded includes New, Continuation and Supplemental Awards	$16,374,900	73	$19,246,131	107
	SUCCESS RATE: 82.95%		**SUCCESS RATE: 95.54%**	

2018 CCI Return on Investment (ROI) is $7.52 dollars per $1 invested in CCI MEIF and CCI E&G

D. Curricular Innovations in partnership with Academic Units

- Joint UM Business School and CCI course in Abrupt climate change, business and policy now includes law through association with UM Law School (Drs. Mahon, Mayewski, Norchi).

IV. Student Engagement, Student Success

A. Student Research, Scholarship or Creative Activities (examples)

- "Scientist's Guide to the United Nations Framework Convention on Climate Change's Conference of the Parties (COP)" produced by grad students Kochtitzky and McGinn with Drs. Strong and Isenhour.
- Scholar-athlete makes case for protecting the environment (Greenawalt) with CCI grad student Groff working in Falkland Islands 15 Feb 2018.
- Climate change art in Press Republican column and many other venues (grad student Pelto)
- 2017 American Geophysical Union 100 Outstanding Student paper award winner (grad student Radue).
- Washington Post, Reuters, Daily Mail, The Straits Times, Business Day report finding of massive snowfall among Alaska's highest peaks study (Dr. Kreutz and his grad students).
- K-12 students follow CCI grad student Kaluzienski in Antarctica.
- Popular science article reports human source lead pollution in Europe for past 2000 years (Drs. Kurbatov, Mayewski and grad students Clifford, Korotkikh).

B. Student Awards

- Science magazine names recovery of ancient ice runner-up for 2017 Breakthrough of the Year (Princeton and Drs. Kurbatov, Mayewski, post-doc Spaulding, grad student Clifford).
- Inside Science reports on glacier melt releasing pollutants (grad student Miner).
- Shackleton Academic scholarship awarded to grad student Groff.
- Dr. Susan J. Hunter Presidental Research Impact Award – Susan Elias – "Deer Tick Phenology and Warming Climate in Maine, USA" (Dr. Maasch, advisor).
- Dean of Graduate School Undergraduate Mentor Award – Third Place – William Kochtitzky – "What Causes Glaciers to Destablize" (Dr. Kreutz, advisor).

- UMaine Alumni Association Award – Emily Blackwood – "Virtual Simulation of the Damariscotta Shell Middens" (Dr. A. Kelley, advisor).
- UMaine Student Symposium – Social Studies Graduate Winner – Kate Pontbriand and Emily Blackwood – "Seasonal Analysis of Four Coastal Archaeological Sites in Eastern Maine Using Mollusks" (Dr. Sandweiss, advisor).
- Maine Space Grant Symposium (MSGC) Graduate Fellowship – Erin McConnell (Dr. Kreutz, advisor).
- Chase Distinguished Research Assistantship – Susan Elias (Dr. Maasch).
- American Geophysical Union – First Place (Graduate Virtual Poster) – Nick Richmond – "3D Bedrock Channel Evolution with Smoothed Particle Hydrodynamics Coupled to a Finite Element Earth" (Dr. Koons, advisor).
- The Churchill Award for Outstanding Exploration (2018 Harold W. Borns Symposium) – grad students Kimberley Rain Miner and Mario Williams.
- Best Presentation Award (2018 Harold W. Borns Symposium) – Mariah Radue (1st place); Benjamin Seliger (2nd place); Julia Simonson (3rd place).
- Best Poster Award (2018 Harold W. Borns Symposium) – Clara Deck and Marima Dryak.
- Student Outstanding Service Award (2018 Harold W. Borns Symposium) – Anne St. Amand.

V. Preserving-Restoring Infrastructure

A. Renovation /Construction Projects

- E3RB (Extreme Environment Education and Research Building) completed by Facilities and currently in use for expedition training, equipment design and modification, and field equipment storage and staging.

B. Renovation/Construction Projects Planned for Coming Year

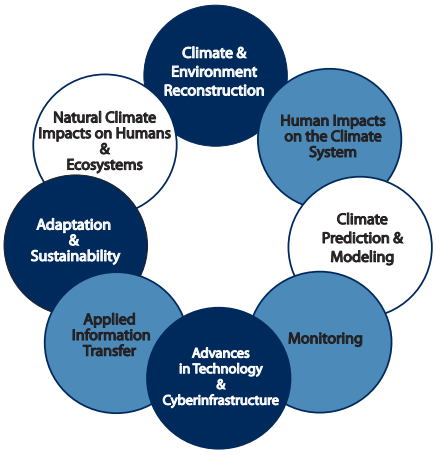
- Interior additions to E3RB on-going and modifications to three CCI Sawyer Research Building laboratories.

VI. Summary of Anticipated Challenges

For climate change and the Climate Change Institute at the University of Maine to continue to function at the cutting edge of climate change and continue to thrive and lead in the nation and the world requires the following:

- Continued growth in tenure track faculty positions shared between CCI and its legacy academic partners (School of Earth and Climate Sciences, Department of Anthropology, School of Biology and Ecology) and continued collaboration between CCI and cooperating faculty in several other academic and research units such as: Schools of Computing and Information Sciences, Marine Sciences, Forest Resources, Business, and Department of Chemistry.
- Continued addition to CCI of research faculty supported in some cases partly by E&G and/or MEIF in addition to compensation for teaching, and return on indirect.
- Expansion and/or addition of transformative new directions through associated tenure track positions for CCI and climate change at the University of Maine including cyberinfrastructure with an emphasis on data integration, analysis and visualization.
- Resources to enhance outreach via CCI and CCI partners to address the increasing demand for climate information, and support for mitigation, adaptation, sustainability, innovation and entrepeneurial strategies.

VII. Summary of New Initiatives for Present Year



- CCI has eight major themes that together describe its breadth of contributions and linkages across the University of Maine and at state, national and international levels, and expectations for the future of CCI and climate change at the University of Maine. These eight themes represent the current evolution of the Institute's approach to the rapidly emerging understanding of climate change and the implications of change.
- Climate Futures, Arctic Futures Institute, and several new federally funded muti-instutional research projects led by CCI researchers.
- The Arctic Futures Institute (AFI) is a joint initiative of the Center for Oceans and Coastal Law in the University of Maine School of Law, the Climate Change Institute and the World Ocean Observatory. These three founding AFI institutions are a unique combination of science, law, policy, education and communication based in Maine. AFI: (1) Nurtures and leverages an international network in the northern latitudes to advance Maine objectives including research, education and commerce. (2) Contributes to the global effort to balance science and commerce, helping to assure the long-term preservation of the Arctic. and (3) Promotes understanding of Arctic issues through web-based and other communications to build broad public awareness of Arctic issues for Maine, the United States, and throughout the global Arctic community. AFI's first major initiative was a summer institute held in Portland (14-18 June 2018) attended by 25 graduate and professional school students, and by representatives from state and federal agencies, Maine business people, Maine lawyers, the National Guard and the Navy.
- CCI seeks to significantly enhance its involvement in the social and policy aspects of climate change at the state, federal and international level based on an emerging cohort of early career social science faculty now associated with CCI.

VIII. Summary of Goals for Upcoming Year

- Continue expanding and enhancing the initiatives described above.

IX. Summary of Unit Review(s)

- None done this year
- CCI has typically developed five-year plans and our next five-year iteration will be undertaken Fall 2018.

X. List of All Faculty Associated with the Unit

Faculty Name	Center Faculty Title	Acad. Unit	MOU*	Initial Appoint Date
Katherine Allen	Cooperating Research Assistant Professor	SECS		9/2016
Daniel Belknap	Professor Emeritus	SECS		5/1989
Nancy Bertler	Research Assistant Professor			10/2005
Sean Birkel	Research Assistant Professor	SECS		1/2013
Pascal Bohleber	Research Associate			9/2016
Harold Borns	Professor Emeritus	SECS		1973
Gordon Bromley	Adjunct Assistant Professor	SECS		10/2014

Fei Chai	Cooperating Professor	SMS		9/2002
Seth Campbell	Research Assistant Professor	SECS		9/2018
Sudarshan Chawathe	Cooperating Associate Professor	CIS		8/2007
Ronald Davis	Professor Emeritus	SBE		
George Denton	Professor	SECS		9/1974
Phillip Dickens	Cooperating Associate Professor	CIS		3/2017
Daniel Dixon	Research Assistant Professor			5/2013
Ellyn Enderlin	Research Assistant Professor	SECS		11/2014
James Fastook	Cooperating Professor	CIS		6/1989
Ivan Fernandez	Cooperating Professor	Sch. of Forest Res.		3/2009
Jacquelyn Gill	Assistant Professor	SBE		9/2013
Bjorn Grigholm	Research Assistant Professor			11/2016
Brenda Hall	Professor	SECS		9/2001
Sarah Hall	Adjunct Research Professor			10/2017
Roger LeB. Hooke	Cooperating Research Professor	SECS		1/1991
Cindy Isenhour	Associate Professor	Dept. of Anthrop.		9/2017
George Jacobson	Professor Emeritus	SBE		
Shaleen Jain	Cooperating Associate Professor	CE		8/2007
David Keefer	Adjunct Professor			9/2008
Alice Kelley	Research Associate Professor	SECS		2/2007
Joseph Kelley	Cooperating Professor	SECS		1/1997
Peter Koons	Professor	SECS		4/2006
Karl Kreutz	Professor	SECS		7/2000
Andrei Kurbatov	Associate Research Professor	SECS		9/2006
Danielle Levesque	Cooperating Assistant Professor	SBE		3/2017
Bradfield Lyon	Research Associate Professor	SBE		11/2015
Kirk Maasch	Professor	SECS		10/1991
John Mahon	Cooperating Professor	Maine Bus. School		12/2016
Paul Mayewski	Professor	SECS		7/2000
Brian McGill	Cooperating Professor	SBE		6/2012
Lou McNally	Research Assistant Professor			11/2013
Kimberley Miner	External Associate		Y	5/2018
Alexander More	Research Assistant Professor			11/2017
Peter Neill	Adjunct Research Associate			4/2015
Matthew Nisbett	Adjunct Associate Professor			4/2013
Charles Norchi	Cooperating Professor	UM School of Law		4/2017
Robert Northington	Research Assistant Professor			7/2016
Stephen Norton	Professor Emeritus			
Brian Olsen	Research Associate Professor	SBE		5/2009
Gordon Oswald	Research Professor			12/2004
Andrew Pershing	Adjunct Professor			5/2016
Aaron Putnam	Cooperating Assistant Professor	SECS		9/2016
Laura Rickard	Cooperating Assistant Professor	Dept. of Comm.		9/2016
Paul Roscoe	Cooperating Professor	Dept. of Anthrop.		9/2002
Daniel Sandweiss	Professor	Dept. of Anthrop.		9/1992
David Sanger	Professor Emeritus	Dept. of Anthrop.		
Jasmine Saros	Professor	SBE		7/2007
W.G. Sayre	Adjunct Professor			2/2012
Joerg Schaefer	Adjunct Professor			9/2016
Molly Schauffler	Research Assistant Professor			3/2012
Kristin Schild	Research Assistant Professor	SECS		2/2018

Anton Seimon	Adjunct Assistant Professor			4/2013
Jefferson Simoes	Adjunct Professor			4/2011
William Sneed	Research Assistant Professor			12/2016
Kristin Sobolik	Adjunct Professor			12/2016
Marcella Sorg	Research Professor	Dept. of Anthrop.		10/2009
Nicole Spaulding	Research Assistant Professor			12/2015
J. Curt Stager	Adjunct Professor			9/2003
Aaron Strong	Cooperating Assistant Professor	SMS		2/2017
Jeffrey Thaler	Cooperating Professor	UM School of Law		9/2012
Andrew Thomas	Cooperating Professor	SMS		2/2017
Gregory Zaro	Professor	Dept. of Anthrop.		9/2006

APPENDIX A: FY2018 CCI RESEARCH FUNDING - SUBMITTED & AWARDED GRANTS - LISTING INCLUDES ALL ACTIVE AWARDS.

Person	Title	Role	Unit	RESP	Sponsor	Award	Type
Allen, Katherine	Collaborative Research: Pacific Ocean stratification since the last ice age: New constraints from benthic foraminifera	PI	Lead PI's Department	100.00%	National Science Foundation	$283,274.00	Continuation
Allen, Katherine	CAREER: Gulf of Maine Climate and Ocean Circulation from Deglaciation to the Present	PI	Lead PI's Department	100.00%	National Science Foundation	$535,689.00	Pending
Birkel, Sean	GreenTRACS: A Greenland Traverse for Accumulation & Climate Studies	PI	Climate Change Institute	100.00%	National Science Foundation	$169,567.00	Continuation
Birkel, Sean	Maine Climate Futures: Interactive Data Visualization Resource and Education Outreach for Future Climate Impact Planning	PI	Climate Change Institute	60.00%	Jane's Trust Foundation	$141,882.00	Pending
Bromley, Gordon	Request for REU Supplement for NSF grant 1443321	PI	Climate Change Institute	100.00%	National Science Foundation	$5,789.00	Continuation
Bromley, Gordon	Resolving the Impact of So-Called "Heinrich Stadial 1" on the Terrestrial Cryosphere of the North Atlantic Region	PI	Climate Change Institute	100.00%	Comer Science and Educational Foundation	$25,000.00	Continuation
Bromley, Gordon	Collaborative Research: Potential direct geologic constraints on ice sheet thickness in the central Transantarctic Mountains during the Pliocene warm	PI	Climate Change Institute	100.00%	National Science Foundation	$291,563.00	Continuation
Chai, Fei	MRI Track 1: Acquisition of High Performance Computing to Model Coastal Responses to a Changing Environment	Co-PI (Brady)	School of Marine Sciences	15.00%	National Science Foundation	$266,309.00	Continuation
Chai, Fei	Improving tide-estuary representation in MPAS-Ocean Yr2	PI	School of Marine Sciences	100.00%	US Dept of Energy	$75,104.00	New
Cruz-Uribe, Alicia	Acquistion of LA-ICP-QQQ-MS equipment for in situ trace element and isotopic research and training at the University of Maine	PI	School of Earth & Climate Sciences	100.00%	National Science Foundation	$298,269.00	New
Denton, George	Heinrich Summers	PI	Climate Change Institute	100.00%	Comer Science and Educational Foundation	$40,000.00	Continuation
Denton, George	Little Ice Age and Medieval Warm Period: Global or Not?	PI	Climate Change Institute	50.00%	National Geographic Society	$30,245.00	New
Denton, George	Southern Hemisphere Persepective on The Last Ice Age	PI	Climate Change Institute	50.00%	National Science Foundation	$396,749.00	Pending
Dixon, Daniel	2018 Mandela Washington Fellowship Institute - University of Maine	Co-PI (Rubin)	Margaret Chase Smith Center	50.00%	US Dept of State	$145,000.00	Rejected
Enderlin, Ellyn	Glaciological analysis in support of the J2F-4 search in Southeast Greenland	PI	Climate Change Institute	100.00%	US Dept. of Defense	$25,000.00	Continuation
Enderlin, Ellyn	Antarctic Submarine Melt Variability from Remote Sensing of Icebergs - Yr 1	PI	Climate Change Institute	100.00%	National Science Foundation	$116,033.00	Continuation
Enderlin, Ellyn	Intra-annual Force Balance Analysis of Tidewater Glaciers	PI	Climate Change Institute	100.00%	National Aeronautics & Space Administration	$204,596.00	Continuation
Enderlin, Ellyn	Intra-annual Force Balance Analysis of Tidewater Glaciers - Ext.	PI	CLimate Change Institute	100.00%	National Aeronautics & Space Administration	$59,307.00	Continuation
Enderlin, Ellyn	Workshop on Communicating Science for Polar Scientists	PI	Climate Change Institute	100.00%	National Aeronautics & Space Administration	$2,236.00	New
Enderlin, Ellyn	Inferring Greenland fjord bathymetry using remote sensing observations	PI	Climate Change Institute	10.00%	National Aeronautics & Space Administration	$5,000.00	New
Enderlin, Ellyn	Remote Sensing of Icebergs in Greenland's Fjords and Coastal Waters Yr 3	PI	Climate Change Institute	100.00%	National Aeronautics & Space Administration	$35,000.00	New
Enderlin, Ellyn	Collaborative Research: What controls calving? A Greenland-wide test of terminus change mechanisms	PI	Climate Change Institute	100.00%	National Science Foundation	$159,670.00	New
Enderlin, Ellyn	Antarctic Submarine Melt Variability from Remote Sensing of Icebergs Yrs 2 and 3	PI	Climate Change Institute	100.00%	National Science Foundation	$252,502.00	New
Enderlin, Ellyn	Mapping Iceberg Melt Variability around Svalbard and the Antarctic Peninsula with Satellite Imagery	PI	Climate Change Institute	5.00%	National Aeronautics & Space Administration	$124,217.00	Pending
Enderlin, Ellyn	Linking Ice Mélange Characteristics to Glacier Terminus Evolution	PI	Climate Change Institute	5.00%	National Aeronautics & Space Administration	$128,310.00	Pending
Fastook, James	Transforming mathematics education with an immersive, gesture-based digital learning platform	Co-PI (Dimmel)	Lead PI's Department	25.00%	National Science Foundation	$726,524.00	Rejected
Fernandez, Ivan	(Seed Grant) Maine's Changing Winter: focus on natural resources, ecology, and the economy	Co-PI (Nelson)	School of Forest Resources	20.00%	US Dept of the Interior	$5,000.00	Continuation
Fernandez, Ivan	USDA Climate Hub - UMaine Cooperative Agreement Yr 2	Co-PI (Servello)	Maine Agriculture and Forestry Experiment Station	50.00%	US Dept of Agriculture	$23,000.00	Continuation
Fernandez, Ivan	Nitrogen controls on detrital organic matter dynamics in the Northern Forest: Evidence from a 26-year nitrogen addition experiment at the Bear Brook Watershed	PI	School of Forest Resources	15.00%	US Dept of Agriculture	$79,957.00	Continuation
Fernandez, Ivan	LTREB Renewal: Biogeochemical Mechanisms of Response in the Third Decade of Whole-Ecosystem Experimental Manipulations at the Bear Brook Watershed in Maine (BBWM)	PI	Lead PI's Department	50.00%	National Science Foundation	$89,340.00	Continuation
Fernandez, Ivan	LTREB Renewal: Biogeochemical Mechanisms of Response in the Third Decade of Whole-Ecosystem Experimental Manipulations at the Bear Brook Watershed in Maine (BBWM) Yr2	PI	Lead PI's Department	50.00%	National Science Foundation	$89,898.00	Continuation
Fernandez, Ivan	LTREB: Renewal: Biogeochemical Mechanisms of Response Yr3	PI	Lead PI's Department	50.00%	National Science Foundation	$89,974.00	Continuation
Fernandez, Ivan	LTREB: Renewal: Biogeochemical Mechanisms of Response Yr4	PI	Lead PI's Department	50.00%	National Science Foundation	$89,942.00	Continuation
Fernandez, Ivan	LTREB: Renewal: Biogeochemical Mechanisms of Response Yr5	PI	Lead PI's Department	100.00%	National Science Foundation	$89,721.00	Continuation
Fernandez, Ivan	Assessing and monitoring the influce of forest management practices on soil productivity, carbon storage, and conservation in the Acadian Forest Region	Co-PI (Puhlick)	Center for Research on Sustainable Forests	10.00%	Sustainable Forestry Initiative	$90,000.00	Continuation
Fernandez, Ivan	SEP Integrated National Framework for Cellulosic Drop in Fuels	Co-PI (Pendse)	Forest Bioproducts Research Institute	5.00%	National Science Foundation	$1,774,741.00	Continuation
Fernandez, Ivan	SEP Integrated National Framework for Cellulosic Drop in Fuels +$	Co-PI (Pendse)	Forest Bioproducts Research Institute	5.00%	National Science Foundation	$95,523.00	Continuation
Fernandez, Ivan	USDA Climate Hub - UMaine Cooperative Agreement Yr 2	Co-PI (Servello)	Maine Agriculture and Forestry Experiment Station	50.00%	US Dept of Agriculture	$15,000.00	New
Fernandez, Ivan	The Climate Adaptation Fellowship: A Collaborative Curriculum Design Project	PI	School of Forest Resources	30.00%	US Dept of Agriculture	$45,709.00	New
Fernandez, Ivan	Controls on Phosphorus Export from Agricultural Fields to the Aroostook River, Maine - Phase II	PI	School of Forest Resources	100.00%	US Environmental Protection Agency	$130,000.00	New
Fernandez, Ivan	Winter Soil Dynamics in a Time of Change: The Missing Link	PI	Lead PI's Department	100.00%	National Science Foundation	$0.00	Pending
Fernandez, Ivan	Assessing and monitoring the influce of forest management practices on soil productivity, carbon storage, and conservation in the Acadian Forest Region	Co-PI (Puhlick)	Center for Research on Sustainable Forests	10.00%	Sustainable Forestry Initiative	$290,198.00	Pending
Gill, Jacquelyn	Collaborative research: A mouse's eye view of Rancho La Brea: Assessing millennial-scale community stability using highly-resolved mammal and vegetation food webs	PI	Climate Change Institute	100.00%	National Science Foundation	$296,534.00	Continuation
Gill, Jacquelyn	PACE Workshop: Integrating Paleo and Community Ecology	PI	Climate Change Institute	100.00%	National Science Foundation	$49,720.00	Continuation
Gill, Jacquelyn	CAREER: Environmental change and extinction on the mammoth steppe	PI	Climate Change Institute	100.00%	National Science Foundation	$284,605.00	New
Gill, Jacquelyn	Surviving a mass extinction: Lessons from the post K-Pg fern spike	PI	Climate Change Institute	100.00%	National Aeronautics & Space Administration	$332,711.00	Pending
Gill, Jacquelyn	MSB-FRA: Trajectories to extinction: Patterns, causes, and effects of megafaunal population and range dynamics during the last deglaciation	PI	Climate Change Institute	100.00%	National Science Foundation	$451,733.00	Pending
Hall, Brenda	Collaborative Research: High-resolution reconstruction of Holocene deglaciation in the southern Ross Embayment	PI	Climate Change Institute	100.00%	National Science Foundation	$165,146.00	Continuation
Hall, Brenda	Signature of the Last Termination in Maine	PI	Climate Change Institute	100.00%	Comer Science & Education Foundation	$30,000.00	Continuation
Hall, Brenda	Collaborative Research: Assessing the Antarctic Ice Sheet from Bryd Glacier	PI	Climate Change Institute	100.00%	National Science Foundation	$200,803.00	Continuation
Hall, Brenda	When was the Last Glacial Maximum in the South Atlantic?	PI	Climate Change Institute	100.00%	National Geographic Society	$36,575.00	New
Hall, Brenda	NSFPLR-NERC: Geological History Constraints on the Magnitude of Grounding Line Retreat in the Thwaites Glacier System	PI	Climate Change Institute	80.00%	National Science Foundation	$109,362.00	New
Hall, Brenda	Response of the Antarctic Ice Sheet to the last great global warming	PI	Climate Change Institute	50.00%	National Science Foundation	$382,268.00	New
Hall, Brenda	The Last Glacial Maximum and Termination in the South Atlantic region, derived from mountain-glacier records in the Falkland Islands: A test of mechan	PI	Climate Change Institute	100.00%	National Science Foundation	$263,154.00	Rejected
Hall, Brenda	Southern context for the WAIS Divide ice core	PI	Climate Change Institute	50.00%	National Science Foundation	$399,895.00	Pending
Isenhour, Cynthia	Rethinking Reuse and Resilience in Depleted Rural America	PI	Senator George J. Mitchell Center	70.00%	National Science Foundation	$85,738.00	New
Isenhour, Cynthia	The Emergent Risks of Food Waste Recovery: Characterizing the Contaminants in MSW Organics from Different Sources	Co-PI (MacRae)	Sustainability Solutions Initiative	20.00%	Environmental Research & Education Foundation	$143,000.00	New
Isenhour, Cynthia	Understanding Climate Resilient Development and Discourse in the Peruvian Highlands	PI	Lead PI's Department	10.00%	National Science Foundation	$16,321.00	Rejected
Isenhour, Cynthia	Building a Sustainable Program on Circular Food Economy for Undergraduate Students within a Multidisciplinary Team	Co-PI (Saber)	Senator George J. Mitchell Center	16.60%	US Dept of Agriculture	$149,995.00	Pending
Isenhour, Cynthia	Setting Circular Economies in Motion: Redefining Waste, Resource and Resilience in the Anthropocene	PI	Senator George J. Mitchell Center	100.00%	Carnegie Corporation	$190,540.00	Pending
Jain, Shaleen	Improved delineation of natural infrastructure and capital as improved strategies for flood attenuation in support of State's "Clean Water for Maine"	PI	Lead PI's Department	100.00%	US Dept of the Interior	$33,258.00	Continuation
Jain, Shaleen	Changes in Extreme Precipitation and Linkages to Atmospheric Rivers in Maine	PI	Lead PI's Department	100.00%	National Aeronautics & Space Administration	$24,926.00	New
Jain, Shaleen	NSF INCLUDES DDLP: Wabanaki Youth in Science (WaYS) Program to Bridge inclusion in Post-Secondary Education Through the Sciences (Traditional Ecologic	Co-PI (Ranco)	Wabanaki Center	10.00%	National Science Foundation	$299,985.00	New
Kelley, Alice	Lost to the Sea: Maine's Ancient Coastal Heritage	PI	Lead PI's Department	70.00%	US Dept of Commerce	$67,633.00	Continuation
Kelley, Alice	Lost to Sea: Maine's Ancient Coastal Heritage Yr2	PI	Sea Grant Program	100.00%	US Dept of Commerce	$74,763.00	Continuation
Koons, Peter	Collaborative Research: Flow and Fracture Dynamics in an Ice Shelf Lateral Margin: Observations and modeling of the McMurdo Shear Zone - YR1-YR3	PI	Climate Change Institute	100.00%	National Science Foundation	$326,390.00	Continuation
Koons, Peter	Collaborative Research: Influence of natural ice microstructure on rheology in general shear: in-situ studies in the Alaska Range	Co-PI (Gerbi)	Lead PI's Department	15.00%	National Science Foundation	$420,937.00	Continuation
Koons, Peter	Collaborative Research: Flow and Fracture Dynamics in an Ice Shelf Lateral Margin: Observations and modeling of the McMurdo Shear Zone	PI	Climate Change Institute	100.00%	National Science Foundation	$48,432.00	New
Koons, Peter	MRI: Acquisition of a high-performance computing instrument to support deep learning, modeling/simulation, and visualization for STEM+Art	Co-PI (Turner)	Lead PI's Department	20.00%	National Science Foundation	$1,458,975.00	Pending
Kreutz, Karl	Geophysical Reconnaissance to Expand Ice Core Hydroclimate Reconstructions in the Northeast Pacific (St. Elias)	PI	Climate Change Institute	100.00%	National Science Foundation	$214,890.00	Continuation
Kreutz, Karl	SPICE Core Chronology & Climate Records using Chemical & Microparticle	PI	Climate Change Institute	100.00%	National Science Foundation	$205,000.00	Continuation
Kreutz, Karl	Collaborative Research: Influence of natural ice microstructure on rheology in general shear: in-situ studies in the Alaska Range	Co-PI (Gerbi)	Lead PI's Department	15.00%	National Science Foundation	$420,937.00	Continuation
Kreutz, Karl	Exploration of the Denali basal ice core archive	PI	Climate Change Institute	100.00%	National Science Foundation	$95,794.00	New
Kreutz, Karl	Reconstructing precipitation changes in the St. Elias mountains	PI	Climate Change Institute	75.00%	National Geographic Society	$29,360.00	Pending
Kreutz, Karl	COLLABORATIVE RESEARCH: North Pacific Wildfire-Climate Relationships over the past Millennium from the Denali and Eclipse Ice Cores	PI	Climate Change Institute	100.00%	National Science Foundation	$242,116.00	Pending
Kurbatov, Andrei	Collaborative research: Tephrochronology of a South Pole ice core/2015438	PI	Climate Change Institute	80.00%	National Science Foundation	$205,000.00	Continuation
Kurbatov, Andrei	COLLABORATIVE RESEARCH: Pleistocene/Holocene Climate Reconstruction from a Pamir high resolution deep ice-core	Co-PI (Mayewski)	Climate Change Institute	49.00%	National Science Foundation		Continuation
Kurbatov, Andrei	Collaborative Research: Window into the 40 kyr world from climate records in 1 Ma ice from the Allan Hills Blue Ice Area	Co-PI (Mayewski)	Climate Change Institute	40.00%	National Science Foundation		Continuation
Kurbatov, Andrei	Acquisition of LA-ICP-QQQ-MS equipment for in situ trace element and isotopic research and training at the University of Maine	Co-PI (Cruz-Uribe)	Climate Change Institute	10.00%	National Science Foundation		New
Kurbatov, Andrei	Collaborative Research: Window into the 40 kyr world from climate records in 1 Ma ice from the Allan Hills Blue Ice Area	Co-PI (Mayewski)	Climate Change Institute	40.00%	National Science Foundation		Continuation

Levesque, Danielle	NSF NRT: One Health and the Environment	Co-PI (Teisl)	Lead PI's Department	8.00%	National Science Foundation	$2,998,066.00
Lyon, Bradfield	Coupled Model Biases in the SST Distribution of the Global Tropics and Their Influence on Climate Change Projections	PI	Climate Change Institute	100.00%	National Science Foundation	$231,888.00
Lyon, Bradfield	Drying Versus Wettening of the East African Climate	PI	Climate Change Institute	100.00%	National Science Foundation	$120,655.00
Lyon, Bradfield	Coupled Model Biases in the SST Distribution of the Global Tropics and Their Influence on Climate Change Projections	PI	Climate Change Institute	100.00%	National Science Foundation	$506,869.00
Lyon, Bradfield	U.S. Drought Intensification and Amelioration on Sub-seasonal Timescales	PI	Climate Change Institute	60.00%	US Dept of Commerce	$330,548.00
Mayewski, Paul	Collaborative Research: Window into the 40 kyr world from climate records in 1 Ma ice from the Allan Hills Blue Ice Area	PI	Climate Change Institute	60.00%	National Science Foundation	$52,541.00
Mayewski, Paul	Collaborative Research: Window into the 40 kyr world from climate records in 1 Ma ice from the Allan Hills Blue Ice Area	PI	Climate Change Institute	60.00%	National Science Foundation	$98,988.00
Mayewski, Paul	Collaborative Research: Ultra-High-Resolution Investigation of High Andean Snow and Ice Chemistry To Improve Paleoclimatic Reconstruction and Enhance	PI	Climate Change Institute	75.00%	National Science Foundation	$185,436.00
Mayewski, Paul	Collaborative Research: Ultra-High-Resolution Investigation of High Andean Snow and Ice Chemistry To Improve Paleoclimatic Reconstruction and Enhance Yr2	PI	Climate Change Institute	75.00%	National Science Foundation	$283,455.00
Mayewski, Paul	Collaborative Research: Ultra-High-Resolution Investigation of High Andean Snow and Ice Chemistry To Improve Paleoclimatic Reconstruction and Enhance Yr3	PI	Climate Change Institute	75.00%	National Science Foundation	$256,216.00
Mayewski, Paul	Collaborative Research: Pleistocene/Holocene Climate Reconstruction from a Pamir High Resolution Deep Ice-core	PI	Climate Change Institute	100.00%	National Science Foundation	$192,717.00
Mayewski, Paul	COLLABORATIVE RESEARCH: Pleistocene/Holocene Climate Reconstruction from a Pamir high resolution deep ice-core	PI	Climate Change Institute	51.00%	National Science Foundation	$195,688.00
Mayewski, Paul	Collaborative Research: Pleistocene/Holocene Climate Reconstruction from a Pamir High Resolution Deep Ice-core	PI	Climate Change Institute	100.00%	National Science Foundation	$202,426.00
Mayewski, Paul	An Unprecedented 3500 years of European History and Environmental Change - Arcadia Reference AC3450					
McGill, Brian	iDiv contract for Measurment of Biodiversity	PI	Senator George J. Mitchell Center	100.00%	German Centre for Integrative Biodiversity Research	$52,500.00
McGill, Brian	Collaborative Research: ABI Development: Creating a generic workflow for scaling up the production of species ranges	PI	Senator George J. Mitchell Center	100.00%	National Science Foundation	$89,963.00
McGill, Brian	REMOTE SENSING FOR EPIDEMIOLOGY IN AFRICAN CITIES	PI	Senator George J. Mitchell Center	100.00%	belspo	$97,912.00
MacKenzie, Caitlin	Conservation Challenges for Tundra Refugia under Climate Change: A Paleoecological Perspective on Subalpine and Alpine Vegetation in Maine	PI	Climate Change Institute	100.00%	David H. Smith Conversation Fellowship	$108,780.00
Norton, Stephen	Evaluating and Predicting Vulnerability for Water Quality Decline in Maine Lakes	Co-PI (Amirbahman)	Cooperative Extension	50.00%	US Environmental Protection Agency	$12,304.00
Norton, Stephen	EAGER: Evaluating potential for lake water quality decline by partnering with citizen scientists	Co-PI (Amirbahman)	Lead PI's Department	40.00%	National Science Foundation	$98,620.00
Olsen, Brian	Determining bird and invertebrate food-web connections and use of rockweed in light of commercial harvesting	Co-PI (Klemmer)	Lead PI's Department	50.00%	ME Dept of Inland Fisheries & Wildlife	$17,883.00
Olsen, Brian	Collaborative Research: Expanding a National Network for Automated Analysis of Constructed Response Assessments to Reveal Student Thinking in STEM	Co-PI (Smith)	Lead PI's Department	5.00%	National Science Foundation	$38,824.00
Olsen, Brian	Collaborative Research: Expanding a National Network for Automated Analysis of Constructed Response Assessments to Reveal Student Thinking in STEM	Co-PI (Smith)	Lead PI's Department	5.00%	National Science Foundation	$106,441.00
Olsen, Brian	Collaborative Research: Expanding a National Network for Automated Analysis of Constructed Response Assessments to Reveal Student Thinking in STEM Yr 5	Co-PI (Smith)	Lead PI's Department	5.00%	National Science Foundation	$42,704.00
Olsen, Brian	Reconciling multiple stakeholders in rockweed habitats: Science to help achieve intersecting goals of a fishery and coastal wildlife	Co-PI (Klemmer)	Sea Grant Program	45.00%	US Dept of Commerce	$71,945.00
Olsen, Brian	Animal use of rockweed habitats in coastal Maine	PI	Lead PI's Department	50.00%	US Dept of the Interior	$108,053.00
Olsen, Brian	Assessing the Ecological Effectiveness of Hurricane Sandy Marsh Restoration Activities	PI	Lead PI's Department	90.00%	US Dept of the Interior	$191,161.00
Olsen, Brian	RII Track-2FEC: Genomic Ecology of Coastal Organisms (GECO) – A Systems-based Research and Training Program in Genome-Phenome Relationships in the Wild	PI	Lead PI's Department	28.00%	National Science Foundation	$1,831,431.00
Putnam, Aaron	CAREER: The Last Glacial Termination in Interior Asia	PI	Lead PI's Department	100.00%	National Science Foundation	$146,842.00
Putnam, Aaron	CAREER: The Last Glacial Termination in Interior Asia	PI	Lead PI's Department	100.00%	National Science Foundation	$149,970.00
Putnam, Aaron	CAREER: The Last Glacial Termination in Interior Asia Amend 3	PI	Lead PI's Department	100.00%	National Science Foundation	$153,291.00
Putnam, Aaron	Was the Little Ice Age Global?	PI	Climate Change Institute	50.00%	National Science Foundation	$394,296.00
Rickard, Laura	Sensing storm surge: A citizen science approach to measuring storm surge-estuarine interaction in three Maine communities	Co-PI (Huguenard)	Cooperative Extension	49.00%	National Science Foundation	$99,994.00
Rickard, Laura	NRT: Enhancing conservation science and practice: An interdisciplinary program	Co-PI (De Urioste-Stone)	School of Forest Resources	7.00%	National Science Foundation	$2,998,314.00
Sandweiss, Daniel	Dating Early Evidence for Warfare in Coastal Peru	PI	Climate Change Institute	80.00%	National Geographic Society	$18,478.00
Saros, Jasmine	IGERT: Adaptation to Abrupt Climate Change Yr5	PI	Climate Change Institute	40.00%	National Science Foundation	$446,040.00
Saros, Jasmine	IGERT: Adaptation to Abrupt Climate Change	PI	Climate Change Institute	40.00%	National Science Foundation	$534,449.00
Saros, Jasmine	IGERT: Adaptation to Abrupt Climate Change Yr 4	PI	Climate Change Institute	40.00%	National Science Foundation	$648,736.00
Saros, Jasmine	IGERT: Adaptation to Abrupt Climate Change Yr 2	PI	Climate Change Institute	40.00%	National Science Foundation	$649,931.00
Saros, Jasmine	IGERT: Adaptation to Abrupt Climate Change Yr 3	PI	Climate Change Institute	40.00%	National Science Foundation	$649,931.00
Saros, Jasmine	Jordan Pond Buoy Project Year 3	PI	Climate Change Institute	100.00%	Friends of Acadia	$14,965.00
Saros, Jasmine	Jordan Pond Buoy Project Year 4	PI	Climate Change Institute	100.00%	Friends of Acadia	$14,969.00
Saros, Jasmine	Predicting the sensitivity of boreal lake ecosystems to climate change	PI	Climate Change Institute	100.00%	US Dept of the Interior	$37,694.00
Saros, Jasmine	Predicting the sensitivity of boreal lake ecosystems to climate change Yr2	PI	Climate Change Institute	100.00%	US Dept of the Interior	$51,205.00
Saros, Jasmine	Paleolimnological assessment of high-elevation lakes exceeding critical loads of nitrogen deposition across the Greater Yellowstone Area	PI	Climate Change Institute	100.00%	US Dept of Agriculture	$15,000.00
Saros, Jasmine	COLLABORATIVE PROPOSAL: MSB-FRA: Alpine aquatic metabolism in the mountain west: emergent impacts of a changing cryosphere	PI	Climate Change Institute	100.00%	National Science Foundation	$277,412.00
Saros, Jasmine	EHR-Polar DCL 2017: Fostering Interdisciplinarity through Theme-Based Encounters: The Arctic Coupled Systems (ArCS) Theme	PI	Climate Change Institute	40.00%	National Science Foundation	$292,086.00
Sorg, Marcella	Drug Death Monitoring 2015-2016 +$ Opioid Impacts in Maine	PI	Margaret Chase Smith Center	100.00%	Maine Attorney General	$33,747.00
Sorg, Marcella	Monitoring Maine Drug Deaths for 2017 and 2018	PI	Margaret Chase Smith Center	100.00%	ME Attorney General	$40,112.00
Sorg, Marcella	State Surveillance of Opioid Morbidity and Mortality Yr2	PI	Margaret Chase Smith Center	60.00%	US Dept of Health & Human Services	$101,100.00
Sorg, Marcella	Maine-Vermont Violent Death Reporting System Yr4	PI	Margaret Chase Smith Center	100.00%	ME Attorney General	$155,438.00
Sorg, Marcella	State Surveillance of Opioid Morbidity and Mortality Yr3	PI	Margaret Chase Smith Center	60.00%	US Dept of Health & Human Services	$126,103.00
Sorg, Marcella	Maine-Vermont Violent Death Reporting System Yr5	PI	Margaret Chase Smith Center	100.00%	US Dept of Health & Human Services	$170,976.00
Strong, Aaron	From Paleoceanography to Policy: applying historical coastal pH baselines from long-lived shells and skeletons to contemporary shellfish aquaculture (Bowdoin College sub) #1	Co-PI (Bisson)	Sea Grant Program	5.00%	US Dept of Commerce	$50,520.00
Strong, Aaron	Low pH in the coastal waters of the Gulf of Maine: What are the sources and vulnerabilities to coastal communities?	Co-PI (Townsend)	School of Marine Sciences	25.00%	US Dept of Commerce	$199,973.00
Strong, Aaron	Improvements to regional monitoring networks and assessment of coastal ocean acidification through the lens of four New England estuaries	PI	School of Marine Sciences	100.00%	US Dept of Commerce	$5,610.00
Strong, Aaron	Addressing the mess: developing evaluative methods for group participatory decision support in riverine systems	Co-PI (Klein)	Sustainability Solutions Initiative	20.00%	US Dept of the Interior	$32,406.00
Strong, Aaron	A generic predictive model for ocean and coastal acidification thresholds from Long Island Sound to the Nova Scotian Shelf	PI	School of Marine Sciences	100.00%	US Dept of Commerce	$146,375.00
Strong, Aaron	Sustainability and seaweed: Competing perceptions, definitions and narratives of sustainability in Maine's rockweed harvest	PI	School of Marine Sciences	100.00%	National Science Foundation	$171,046.00
Strong, Aaron	Improving waste water management with farmed kelp: dynamical biophysical and socioeconomic feedbacks to efficacy	Co-PI (Evans)	School of Marine Sciences	30.00%	National Science Foundation	$406,011.00
Strong, Aaron	Ocean and coastal acidification education and outreach for community resilience	PI	School of Marine Sciences	40.00%	US Dept of Commerce	$442,305.00
Strong, Aaron	An integrative approach to addressing sea lice control in the commercial culture of Atlantic salmon	Co-PI (Hamlin)	School of Marine Sciences	10.00%	US Dept of Commerce	$725,365.00
Thomas, Andrew	Using remote-sensing and in-situ water quality measurements for siting bi-valve aquaculture facilities - Year 1	Co-PI (Brady)	School of Marine Sciences	20.00%	US Dept of Commerce	$106,174.00
Thomas, Andrew	Multi- and hyperspectral bio-optical identification and tracking of Gulf of Maine water masses and harmful algal bloom habitat	PI	School of Marine Sciences	60.00%	National Aeronautics & Space Administration	$266,383.00
Thomas, Andrew	Coastal SEES (Track 2), Collaborative Research: Resilience and Adaptation of a Coastal Ecological-Economic System in Response to Increasing Temperature	PI	School of Marine Sciences	15.00%	National Science Foundation	$310,470.00
Thomas, Andrew	Coastal SEES (Track 2), Collaborative Research: Resilience and Adaptation of a Coastal Ecological-Economic System in Response to Increasing Temperature Yr 2	PI	School of Marine Sciences	15.00%	National Science Foundation	$815,282.00
Thomas, Andrew	MaricultureMap - Development of a GIS tool to inform mariculture development in Alaska	PI	School of Marine Sciences	100.00%	US Dept of Commerce	$56,825.00
Thomas, Andrew	Multi- and hyperspectral bio-optical identification and tracking of Gulf of Maine water masses and harmful algal bloom habitat Yr2	PI	School of Marine Sciences	60.00%	National Aeronautics & Space Administration	$226,872.00
Thomas, Andrew	NERACOOS_2016_2021_Buoys_CODAR_Glider_Nutrients_Satellite_Surveys Yr. 2	Co-PI (Pettigrew)	School of Marine Sciences	2.50%	US Dept of Commerce	$811,000.00
Thomas, Andrew	Aquaculture Site Prospecting using High Resolution Remote Sensing Imagery	Co-PI (Brady)	School of Marine Sciences	19.00%	US Dept of Commerce	$692,216.00
					Count = 146	**$37,599,760.00**