Annual Faculty Activity Report

Report to the Office of the Vice President for Research

Research Activities - Fiscal Year 2008

Research Activity for the period of July 1, 2007 to June 30, 2008
# Climate Change Institute

## Annual Faculty Activity Report

*Research Activity for the period of July 1, 2007 to June 30, 2008*

## Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Roster of Climate Change Institute Faculty/Staff</td>
<td>1</td>
</tr>
<tr>
<td>Climate Change Institute E&amp;G &amp; MEIF Funded Positions</td>
<td>2</td>
</tr>
<tr>
<td>Research Grant Submissions Analysis – FY2007/2008</td>
<td>3</td>
</tr>
<tr>
<td>Major Awards</td>
<td>5</td>
</tr>
<tr>
<td>Research Expeditions</td>
<td>5</td>
</tr>
<tr>
<td>Mentoring</td>
<td>5</td>
</tr>
<tr>
<td>Summary of Faculty Publication Totals</td>
<td>5</td>
</tr>
<tr>
<td>Special Recognition/Awards/Honors received for research, scholarship, creativity</td>
<td>6</td>
</tr>
<tr>
<td>Peer Reviewed Publications – Journal Articles</td>
<td>7</td>
</tr>
<tr>
<td>Peer Reviewed Publications – Journal Articles – In Press/Accepted</td>
<td>11</td>
</tr>
<tr>
<td>Peer Reviewed Publications – Journal Articles – Submitted</td>
<td>13</td>
</tr>
<tr>
<td>Peer Reviewed Publications -Book Chapters</td>
<td>15</td>
</tr>
<tr>
<td>Books – Published</td>
<td>15</td>
</tr>
<tr>
<td>Books – Accepted</td>
<td>16</td>
</tr>
<tr>
<td>Book Chapters – Published</td>
<td>16</td>
</tr>
<tr>
<td>Book Chapters In Press/Accepted</td>
<td>17</td>
</tr>
</tbody>
</table>
Service – To Profession 38
Service – To Department 42
Service – To College 44
Service – To University 44
Service – To University System 46
Service – To State Government Agencies 46
Service – To General Public/Local Community 46
Service – To Pre-K-12 Education 47
Service – Manuscripts/Proposal Reviewed 48
Service – Television/Radio/Newspaper Interviews 50
Service – Other 50
Special Public Service Recognition/Awards/Honors Received 51
Other (e.g. special contacts) 51

Goals for Next Year 52
Challenges & Solutions 53
Long Term Priorities 54
<table>
<thead>
<tr>
<th>LastName</th>
<th>FirstName</th>
<th>Position in Research Unit</th>
<th>Home (Institute/Acad Dept)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belknap</td>
<td>Daniel</td>
<td>Cooperating Professor</td>
<td>Earth Sciences/Climate Change Institute</td>
</tr>
<tr>
<td>Bertler</td>
<td>Nancy</td>
<td>Research Assistant Professor</td>
<td>Climate Change Institute</td>
</tr>
<tr>
<td>Borns</td>
<td>Harold</td>
<td>Professor Emeritus of Geological Sciences and Climate Institute</td>
<td>Earth Sciences/Climate Change Institute</td>
</tr>
<tr>
<td>Chai</td>
<td>Fei</td>
<td>Cooperating Associate Professor</td>
<td>School of Marine Sciences/Climate Change Institute</td>
</tr>
<tr>
<td>Chawathe</td>
<td>Sudarshan</td>
<td>Cooperating Assistant Professor</td>
<td>Computer Science/Climate Change Institute</td>
</tr>
<tr>
<td>Davis</td>
<td>Ronald</td>
<td>Professor Emeritus of Biology and Quaternary Studies</td>
<td>Biological Sciences/Climate Change Institute</td>
</tr>
<tr>
<td>de Bruyn</td>
<td>Markus</td>
<td>Postdoctoral Research Associate</td>
<td>Climate Change Institute</td>
</tr>
<tr>
<td>Denton</td>
<td>George</td>
<td>Professor of Geological Sciences</td>
<td>Earth Sciences/Climate Change Institute</td>
</tr>
<tr>
<td>Dieffenbacher-Krall</td>
<td>Ann</td>
<td>Assistant Research Professor</td>
<td>Climate Change Institute/Biological Sciences</td>
</tr>
<tr>
<td>Fastook</td>
<td>James</td>
<td>Cooperating Professor</td>
<td>Computer Science/Climate Change Institute</td>
</tr>
<tr>
<td>Hamilton</td>
<td>Gordon</td>
<td>Research Associate Professor</td>
<td>Climate Change Institute</td>
</tr>
<tr>
<td>Hall</td>
<td>Brenda</td>
<td>Associate Professor of Glacial and Quaternary Geology</td>
<td>Climate Change Institute/Earth Sciences</td>
</tr>
<tr>
<td>Handley</td>
<td>Michael</td>
<td>Laboratory Manager - Inorganic Chemistry</td>
<td>Climate Change Institute/Earth Sciences/Sawyer Env. Chem. Research Lab.</td>
</tr>
<tr>
<td>Hooke</td>
<td>Roger</td>
<td>Cooperating Professor</td>
<td>Climate Change Institute</td>
</tr>
<tr>
<td>Hughes</td>
<td>Terence</td>
<td>Professor of Quaternary Studies</td>
<td>Earth Sciences/Climate Change Institute</td>
</tr>
<tr>
<td>Introne</td>
<td>Douglas</td>
<td>Stable Isotope Technician</td>
<td>Climate Change Institute</td>
</tr>
<tr>
<td>Jacobson</td>
<td>George</td>
<td>Professor of Quaternary Studies</td>
<td>Botany/Climate Change Institute</td>
</tr>
<tr>
<td>Jain</td>
<td>Shaleen</td>
<td>Cooperating Assistant Professor</td>
<td>Civil &amp; Environmental Engineering/Climate Change Institute</td>
</tr>
<tr>
<td>Kelley</td>
<td>Alice</td>
<td>Research Assistant Professor</td>
<td>Earth Sciences/Climate Change Institute</td>
</tr>
<tr>
<td>Kelley</td>
<td>Joseph</td>
<td>Cooperating Professor</td>
<td>Earth Sciences/Climate Change Institute</td>
</tr>
<tr>
<td>Kellogg</td>
<td>Thomas</td>
<td>Professor of Quaternary Studies</td>
<td>Earth Sciences/Climate Change Institute</td>
</tr>
<tr>
<td>Koons</td>
<td>Peter</td>
<td>Associate Professor</td>
<td>Earth Sciences/Climate Change Institute</td>
</tr>
<tr>
<td>Kreutz</td>
<td>Karl</td>
<td>Associate Professor</td>
<td>Climate Change Institute/Earth Sciences</td>
</tr>
<tr>
<td>Kurbatov</td>
<td>Andrei</td>
<td>Assistant Research Professor</td>
<td>Climate Change Institute</td>
</tr>
<tr>
<td>Lagerkint</td>
<td>Ingrid</td>
<td>Research Assistant Professor</td>
<td>Climate Change Institute</td>
</tr>
<tr>
<td>Lee</td>
<td>Betty</td>
<td>Financial &amp; Outreach Manager</td>
<td>Climate Change Institute</td>
</tr>
<tr>
<td>Mayewski</td>
<td>Paul</td>
<td>Director/Professor of Climate Studies</td>
<td>Climate Change Institute/Earth Sciences</td>
</tr>
<tr>
<td>Maasch</td>
<td>Kirk</td>
<td>Professor of Climate Change Institute and Earth Sciences</td>
<td>Climate Change Institute/Earth Sciences</td>
</tr>
<tr>
<td>Meese</td>
<td>Debra</td>
<td>Research Professor</td>
<td>Climate Change Institute</td>
</tr>
<tr>
<td>Norton</td>
<td>Stephen</td>
<td>Cooperating Professor</td>
<td>Earth Sciences/Climate Change Institute</td>
</tr>
<tr>
<td>Nurse</td>
<td>Andrea</td>
<td>Research Scientist</td>
<td>Climate Change Institute</td>
</tr>
<tr>
<td>Ocampo-Raeder</td>
<td>Verionica</td>
<td>Cooperating Assistant Professor</td>
<td>Anthropology/Climate Change Institute</td>
</tr>
<tr>
<td>Oswald</td>
<td>Gordon</td>
<td>Research Professor</td>
<td>Climate Change Institute</td>
</tr>
<tr>
<td>Porter</td>
<td>Charles</td>
<td>Research Associate</td>
<td>Climate Change Institute</td>
</tr>
<tr>
<td>Robinson</td>
<td>Brian</td>
<td>Assistant Professor of Quaternary and Climate Studies</td>
<td>Anthropology/Climate Change Institute</td>
</tr>
<tr>
<td>Roscoe</td>
<td>Paul</td>
<td>Cooperating Professor</td>
<td>Anthropology/Climate Change Institute</td>
</tr>
<tr>
<td>Sandweiss</td>
<td>Daniel</td>
<td>Professor</td>
<td>Dean &amp; Provost for Graduate Studies - Anthropology/Climate Change Institute</td>
</tr>
<tr>
<td>Sanger</td>
<td>David</td>
<td>Professor Emeritus of Anthropology and Quaternary Studies</td>
<td>Anthropology/Climate Change Institute</td>
</tr>
<tr>
<td>Saros</td>
<td>Jasmine</td>
<td>Associate Professor</td>
<td>Climate Change Institute/Biological Sciences</td>
</tr>
<tr>
<td>Seymour</td>
<td>Deborah</td>
<td>Administrative Assistant 1</td>
<td>Climate Change Institute</td>
</tr>
<tr>
<td>Schaufller</td>
<td>Molly</td>
<td>Research Assistant Professor</td>
<td>Climate Change Institute</td>
</tr>
<tr>
<td>Sobolik</td>
<td>Kristin</td>
<td>Professor/Associate Director</td>
<td>Anthropology/Climate Change Institute</td>
</tr>
<tr>
<td>Smith</td>
<td>David</td>
<td>Bird and Bird Professor Emeritus of History</td>
<td>Climate Change Institute/History</td>
</tr>
<tr>
<td>Smoronin</td>
<td>Vladimir</td>
<td>Research Professor</td>
<td>Climate Change Institute/Chemical &amp; Biological Engineering</td>
</tr>
<tr>
<td>Stager</td>
<td>J.Curt</td>
<td>Research Associate</td>
<td>Climate Change Institute</td>
</tr>
<tr>
<td>Vandergoes</td>
<td>Marcus</td>
<td>Assistant Research Professor</td>
<td>Climate Change Institute</td>
</tr>
<tr>
<td>Will</td>
<td>Richard</td>
<td>Adjunct Professor</td>
<td>Climate Change Institute</td>
</tr>
<tr>
<td>Zielinski</td>
<td>Ann</td>
<td>Research and Administrative Coordinator</td>
<td>Climate Change Institute</td>
</tr>
</tbody>
</table>
CLIMATE CHANGE INSTITUTE E&G & MEIF FUNDED POSITIONS

Note: The Climate Change Institute faculty/staff roster numbers 48 people. Only those with CCI MEIF or CCI E&G support are listed here.

<table>
<thead>
<tr>
<th>E&amp;G</th>
<th>Grant Home</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Faculty &amp; Staff</strong></td>
<td></td>
</tr>
<tr>
<td>Denton, George</td>
<td>Libra Professor, Climate Change Institute &amp; Earth Sciences (74%)</td>
</tr>
<tr>
<td>Hall, Brenda</td>
<td>Associate Professor, Climate Change Institute &amp; Earth Sciences (70%)</td>
</tr>
<tr>
<td>Hughes, Terence</td>
<td>Professor, Climate Change Institute &amp; Earth Sciences (55%)</td>
</tr>
<tr>
<td>Jacobson, George</td>
<td>Professor, Climate Change Institute &amp; Biological Sciences (56%)</td>
</tr>
<tr>
<td>Kellogg, Thomas</td>
<td>Professor, Climate Change Institute &amp; Earth Sciences (50%)</td>
</tr>
<tr>
<td>Kreutz, Karl</td>
<td>Associate Professor, Climate Change Institute &amp; Earth Sciences (100%)</td>
</tr>
<tr>
<td>Maasch, Kirk</td>
<td>Professor, Climate Change Institute &amp; Earth Sciences (50%)</td>
</tr>
<tr>
<td>Robinson, Brian</td>
<td>Assistant Professor, Climate Change Institute &amp; Anthropology (65%)</td>
</tr>
<tr>
<td>Saros, Jasmine</td>
<td>Associate Professor, Climate Change Institute &amp; Biological Sciences (49.2%)</td>
</tr>
<tr>
<td>Sobolik, Kristin</td>
<td>Professor, Climate Change Institute &amp; Anthropology (50%)</td>
</tr>
<tr>
<td>Zaro, Gregory</td>
<td>Assistant Professor, Climate Change Institute and Anthropology (50%)</td>
</tr>
<tr>
<td><strong>Staff (not grant writers)</strong></td>
<td></td>
</tr>
<tr>
<td>Addessi, Rebecca</td>
<td>Account Manager (100%)</td>
</tr>
<tr>
<td>Lee, Betty</td>
<td>Financial &amp; Outreach Manager (100%)</td>
</tr>
<tr>
<td>Seymour, Deborah</td>
<td>Administrative Assistant (100%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MEIF</th>
<th>Grant Home</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Faculty &amp; Staff</strong></td>
<td></td>
</tr>
<tr>
<td>Dieffenbacher-Krall, Ann</td>
<td>Assistant Research Professor (32.36%)</td>
</tr>
<tr>
<td>Hamilton, Gordon</td>
<td>Associate Research Professor (44.79%)</td>
</tr>
<tr>
<td>Mayewski, Paul</td>
<td>Professor of Climate Change Institute (100%)</td>
</tr>
<tr>
<td>Koons, Peter</td>
<td>Associate Professor, Climate Change Institute &amp; Earth Sciences (24.04%)</td>
</tr>
<tr>
<td>Kurbatov, Andrei</td>
<td>Assistant Research Professor (69.51%)</td>
</tr>
<tr>
<td>Saros, Jasmine</td>
<td>Associate Professor, Climate Change Institute &amp; Biological Sciences (50.8%)</td>
</tr>
<tr>
<td>Sneed, Sharon</td>
<td>Ion Chromatography Laboratory Manager (100%)</td>
</tr>
<tr>
<td><strong>Staff (not grant writers)</strong></td>
<td></td>
</tr>
<tr>
<td>Holweger, Paul</td>
<td>Research Assistant (100%)</td>
</tr>
<tr>
<td>Introne, Douglas</td>
<td>Stable Isotope Laboratory Manager (100%)</td>
</tr>
<tr>
<td>Zielinski, Ann</td>
<td>Research and Administrative Coordinator (100%)</td>
</tr>
</tbody>
</table>

Research grant submissions for the Climate Change Institute totaled $21,208,399 for fiscal year 2007-2008. This total reflects 81 submissions (includes new, supplemental, continuation, and pre-proposal submissions).

All Research Grant Awards– FY2007 - 2008

Research funded grant awards for the Climate Change Institute totaled $5,672,932 for fiscal year 2007-2008.


Research grant submissions awarded for the Climate Change Institute totals $2,650,892 (32 grants). 46.72% of all research grant awards for FY2007-2008 comprise of new research grant submissions.


Research grant submissions pending for the Climate Change Institute totals $12,357,578 (32 grants) covering FY2008 – FY2011.

Research Grant Submissions Declined – FY2007 – 2008

Research grant awards declined for the Climate Change Institute totaled $6,099,869 (17 grants) during FY2007-2008 intended to cover period FY2008 – FY2011.

Percent Success Rate by all CCI Grant Writers for Research Grant Submissions – FY2007 – 2008

Climate Change Institute faculty and staff were 65.31% successful in obtaining grant awards during FY2007 – 2008.
Funds via E&G and MEIF – FY2007-2008 (minus fringe)

E&G funding for salaries (minus fringe) totals: $610,758
E&G funding for operating totals: $5,877

MEIF funding for salaries (minus fringe) totals: $432,456
MEIF funding for operating totals: $28,350

TOTAL E&G and MEIF FUNDING: $1,077,441

Return on Investment (ROI) for all dollars by CCI – E&G and MEIF (minus fringe)

Total of All Research Grant Awards – FY2007 – 2008 = $5,672,932
Total E&G and MEIF Funding: $1,077,441

ROI = CCI return on investment is $5.265 dollars per $1 invested in MEIF and EandG

The table below includes all Climate Change Institute grant writers who receive E&G and or MEIF funds through CCI.

<table>
<thead>
<tr>
<th>CCI Faculty/Staff</th>
<th>Grant Award Total FY2007/2008</th>
<th>Number of Grants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denton, George</td>
<td>$98,464</td>
<td>2</td>
</tr>
<tr>
<td>Hall, Brenda</td>
<td>$144,703</td>
<td>3</td>
</tr>
<tr>
<td>Hamilton, Gordon</td>
<td>$543,432</td>
<td>4</td>
</tr>
<tr>
<td>Hughes, Terence</td>
<td>$214,590</td>
<td>1</td>
</tr>
<tr>
<td>Koons, Peter</td>
<td>$1,323,892</td>
<td>3</td>
</tr>
<tr>
<td>Kreutz, Karl</td>
<td>$255,129</td>
<td>2</td>
</tr>
<tr>
<td>Mayewski, Paul</td>
<td>$865,948</td>
<td>5</td>
</tr>
<tr>
<td>Saros, Jasmine</td>
<td>$434,047</td>
<td>9</td>
</tr>
</tbody>
</table>

# of Grant Writers = 9

| TOTAL            | $3,880,205          | 29               |
The average amount raised by each CCI grant writer (9) supported by MEIF and/or E&G was $485,025 in FY2007-2008.
Major Awards:

10 this year (4 last year) (maintaining CCI’s high national and international standard of excellence)

Research Expeditions:
CCI takes great pride in its international reputation for research expeditions. All CCI graduate students are involved in at least one research expedition, many several, during their graduate career. Students provide daily logs as part of CCI’s outreach. CCI undertook 22 expeditions this past year. For details of several see: http://climatechange.umaine.edu/Research/Expeditions/index.html

Mentoring
Two postdoctoral fellows (L. Stearns and L. Corrigan) are currently supported by CCI grants and mentored by our faculty.
A total of 34 graduate students are supported by the Institute, 14 are PhD students. Research grants support 22 of the graduate students.

Summary of Faculty Publications – FY2007-2008

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer Reviewed Publications – Journal Articles</td>
<td>45</td>
<td>41</td>
</tr>
<tr>
<td>Peer Reviewed Publications Journal Articles - In Press</td>
<td>20</td>
<td>68</td>
</tr>
<tr>
<td>Peer Reviewed Publications Journal Articles – Submitted</td>
<td>19</td>
<td>40</td>
</tr>
<tr>
<td>Abstracts – Conference Proceedings</td>
<td>52</td>
<td>69</td>
</tr>
<tr>
<td>Book Chapters Published and in press</td>
<td>14</td>
<td>9</td>
</tr>
<tr>
<td>Books</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Technical Publications (Non Peer Reviewed)</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Other Publications</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>Presentations</td>
<td>152</td>
<td>108</td>
</tr>
<tr>
<td>Media and Other Indicator Presentations</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>
Special Recognition/Awards/Honors received for research, scholarship, creativity:

Chawathe, S. I am the junior most member to serve as Vice President of the IEEE Intelligent Transportation Systems Society. IEEE societies are major components of the IEEE, which has close to 400,000 members worldwide.

Dieffenbacher-Krall, A. Springer Scientific Press has renewed its invitation for me to author-edit a book about my research in northern Maine. The invitation resulted from the fact that my and Andrea Nurse's 2005 article in Journal of Paleolimnology received the most "views" of any paper published in the journal that year. I am currently developing a book concept.

Dieffenbacher-Krall, A. Featured on UMaine home page, week of 5/23/2008: Research Spotlight, “Chironomids Give a Whole New Meaning to the Phrase ‘Life is Short’”.

Kelley, J. Invited to tour Moroccan coast and develop web site on world's beaches with Santa Aguila Foundation.

Kelley, J. Invited to be keynote speaker at International Geological Correlation Program meeting in Northern Ireland.

Kelley, J. Plenary session speaker at Northeast Climate Change meeting of federal agency officials.

Kelley, J. Led National Park service officials on field trip of Acadia National Park.

Mayewski, P.
1) In 2007 invited to speak at the ECAD (Explorers Club Annual Dinner) as an honoree to an audience in the Waldorf Astoria of ~1500 people (black tie). Dan Rather was moderator.
2) In 2007 awarded the Lowell Thomas Medal by the Explorers Club for distinguished exploration. Previous medalists have included: E.O. Wilson, Edmund Hillary, Edward Viesturs, Brad and Barbara Washburn, Rita Coldwell, Buzz Aldrin, Robert Ballard, Scott Carpenter, Walter Schirra, Isaac Asimov, Carl Sagan.
3) Nominated by UM for the Medal of Science.
4) In 2008 elected AAAS Fellow, American Association for the Advancement of Science.
5) In 2008 given Distinguished Alumni Award, State University of New York at Buffalo. SUNY@B has 190,000 graduates and fewer than 100 have received this award in the university’s history.
6) In 2007 invited to deliver the once per year S.T. Lee Lecture in Antarctic Studies at several venues in New Zealand.
7) Honorary Research Associate Victoria University of Wellington (2001-present).
(9) Field Leader US ITASE oversnow traverses (1999-2008) – first multi-disciplinary scientific expedition to the South Pole (>8000km traverse – 11 US institutions involved), plus first team ever to traverse to South Pole twice (2003 and 2007), and from different directions (across East and West Antarctica).
(10) World record for Antarctic oversnow traverse distance completed through a combination of travel by foot, ski, snowmobile, tractor; >20,000km.
(11) Accorded unofficial status of one Maine’s most prominent explorers along with Robert E. Peary and Donald Baxter MacMillan during several introductions preceding public lectures.
(12) The only member of UM to achieve the ISI Most Highly Cited status for publications.

Roscoe, P. CLAS Research and Creative Achievement Award

Roscoe, P. Elected member of Phi Kappa Phi


**Peer Reviewed Publications - Journal Articles**


Kaspari, S., Hooke, R., Mayewski, P.A., Kang, S., Qin, D., and Hou, S., in press, Changes in the snow accumulation rate at Mt. Everest based on ice core annual layering and a numerical model, Jour. Glaciology


Oswald, G.K.A. and Gogineni., S.P; Recovery of subglacial water extent from Greenland radar survey data. Journal of Glaciology; Vol. 54, No. 184, 2008


Peer Reviewed Publications – Journal Articles – In Press/Accepted


Holocene climate change events in ice cores from West Antarctica (Siple Dome), East Antarctica (Taylor Dome) and Greenland (GISP2), The Holocene, in press.


Zaro, Gregory, Heather Buiith, Claudia Rivera, Jimena Roldan, and Graciela Suvires (in press). Landscape evolution and human agency: archaeological case studies from drylands in western South America and Australia. ChungarÁ Revista de Antropologia Chilena.

Peer-Reviewed Publications – Journal Articles –Submitted

Dunbar N. W., Kurbatov A.V., Zielinski G.A., (2008 submitted), Complete Tephrochronology of the Siple Dome Ice Core: Correlations and Sources, JVGR


Hughes, T. Thermal Convection and the Origin of Ice Streams

Grigholm,B., Mayewski, P.A., Kang, S., Kaspari, S., Sneed, S., Zhang, Y., Zhang, Q., Cong, Z., in review, Glaciochemical records from a Tibetan Ice Core: Proxy for Surface Pressure, Scalar Wind Velocity and Teleconnection with the PDO
Hughes, T. Variations in Ice-Bed Coupling Beneath and Beyond Ice Streams


Kaspari, S., Mayewski, P.A., Handley, M., Osterberg, E., Kang, S., Hou, S., and Qin, D., in review, Recent increases in atmospheric concentrations of Bi, U, Cs, S, and Ca from a 350-Year Mt. Everest ice core record.

Kaspari, S., Mayewski, P.A., Handley, M., Kang, S., Hou, S., Sneed, S., Maasch, K., and Qin, D., in review, A high resolution record of atmospheric dust composition and variability since AD1650 from a Mt. Everest ice core.


Pang, H., Hou, S., Kaspari, S., Mayewski, P., Masson-Delmotte, V., Jouzel, J., Qin, D., He, Y., and Hong, S., in review, Change of atmospheric circulation in the late 1960s indicated by a Himalayan ice core deuterium excess record.


**Peer Reviewed Publications -Book Chapters**


**Books - Published**


**Books – Accepted**


**Book Chapter – Published**


**Book Chapters In Press/Accepted**


**Peer Reviewed – Abstracts - Published**


Chai, F; Dugdale, R; Brzezinski, M; Chao, Y; Nelson, D; Silicon and Nitrogen Cycling in the Equatorial Pacific: A Model Data Comparison Study. 2008 Ocean Sciences Meeting, March 2008.


Chavez, F P; Chai, F; Chao, Y; Foley, D; Barber, R T; Breaking New Ground Using Remote Sensing and Modeling in Operational Forecasting of Fisheries. 2008 Ocean Sciences Meeting, March 2008.


Dugdale, R; Parker, A; Chai, F; Brzezinski, M; Wilkerson, F, Dynamics of Steady State in Equatorial Pacific Upwelling Productivity: Comparison of Si and N Kinetics from Lab and Field. 2008 Ocean Sciences Meeting, March 2008.


Masahiko Fujii, M F, Emmanuel Boss, Fei Chai; The Value of Adding Optics to Ecosystem Models: A Case Study. 2008 Ocean Sciences Meeting, March 2008


Pawlowski, L, Chai, F, Shi, L; Chao, Y; Chavez, F P; Temporal and Spatial Variation of Nutrients and Plankton Productivity in the California Current System: A Model Data Comparison Study. 2008 Ocean Sciences Meeting, March 2008


Smorodin, V. “Atmosphere in the Earth Environment-Climate System in Global Climate Change. From Problems towards Conceptual Solutions”. In: The Abstracts Book of the CCI 2007 Agassiz Symposium, Orono, ME, USA.


Peer Review Abstracts – Accepted

Kelley, Alice R., Belknap, Daniel F., Sandweiss, Daniel, Maash,Kirk, Rademaker, Kurt, and Reid,David Quebrada Jaguay, Peru - A Shell Midden Site Distant From the Coast
IGCP Working Group IGCP project 495 (Quaternary Land-Ocean Interactions: Driving Mechanisms and Coastal Responses), Meeting, Jordanstown, Northern Ireland. June 22-25


Peer Reviewed Abstracts – Submitted


Dunbar, N.W., W.C. McIntosh, A.V. Kurbatov, and T.I. Wilch (2007), Integrated tephrochronology of the West Antarctic region- implications for a potential tephra record in the West Antarctic Ice Sheet (WAIS) Divide Ice Core, 10th International Symposium on Antarctic Earth Science (ISAES 2007), University of California, Santa Barbara, California (USA), 26 Aug-1 Sep 2007.


Technical report – Peer-Reviewed – Published


**Other – Peer-Reviewed – Accepted**


**Other – Peer Reviewed - Published**


**Other - Published**

Kurabatov, A. Hal Borns Symposium, Orono, Maine USA May 8 - 9, 2008 Update on CASA (Climate of Antarctica and Southern America) initiative.

**Other – In Prepartion**


**Peer-Reviewed Proceedings**


**Presentations:**

**International Presentations**


Fastook, J.L. Sept 2007. West Antarctic Ice Sheet Meeting, Sterling, VA. "Boundary conditions for a full-momentum solver: 1) The dilemma of sliding and 2) how do we do embedded models?"


Goose, Bell, Yang, and Fastook, J.L. December 2007. Fall AGU, "Allerod Collapse of the Newfoundland Ice Cap, northwestern Atlantic Ocean"


http://www.agu.org/cgi-bin/SFgate/SFgate?&listenv=table&multiple=1&range=1&directget=1&application=fm07&database=%2Fdata%2Fepubs%2Fwais%2Findexes%2Ffm07%2Ffm07&maxhits=200&=%22GC43A-0947%22

http://www.agu.org/cgi-bin/SFgate/SFgate?&listenv=table&multiple=1&range=1&directget=1&application=fm07&database=%2Fdata%2Fepubs%2Fwais%2Findexes%2Ffm07%2Ffm07&maxhits=200&=%22H13E-1616%22


Smorodin, V. The Chemical Biophysics Symposium, Toronto, Canada, April 17-19, 2008

Smorodin, V. The International Conference on Nucleation and Atmospheric Aerosols, Dublin, Ireland, September 2007

Smorodin, V. The International Colloidal Conference, Coimbra, Portugal, July 2007

Smorodin, V. The Re binder’s Memorial Conference, Inst. of Physical Chemistry, Russian Academy of Sciences, Moscow, Russia, July 14, 2007.

Smorodin, V. The European Aerosol Conference, Saltsburg, Austria, 2007


National Presentations


Hamilton, G. 2/05/2008. lRecent research in Greenland and Antarctica; NASA Workshop on Polar Glaciology, Boulder CO.


Maasch, K. March 6, 2008. Recent climate change: Natural and human induced / An invited lecture given in a symposia - panel discussion on global warming at the 2008 meeting of the Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, New Orleans, LA
http://www.pittcon.org/archive/2008/technical/is08_miller.html


Mayewski, P. 24 September 2007. Abrupt Climate Change to NOAA.


Smorodin, V. Invited Talk and Discussion of Basic Problems in Atmospheric Science and Advanced Technology at Dept. of Meteorology, University of Utah, Salt Lake City, UT (Host: Prof. N. Fukuta), April, 2007.

Smorodin, V. Invited Talk (Seminar) at Department of Atmospheric Sciences (Division of Environmental Sciences), the Brookhaven National Laboratory, Upton, NY.: “Aerosol Problems in a Context of Global Climate Change: From Nano- to Global Scale“, (Host: Dr. Steve Schwartz, BNL), November 8, 2007

Smorodin, V. Joint Meeting and Talk at the Clarkson Center for Environment, Host: Prof. Phil Hopke, Director of the Center, Clarkson University, Potsdam, NY, USA, April 2007

Zaro, Gregory (March 30, 2008). Integrating Human and Non-human Processes to Understand Long-term Socio-ecological Change along the Peruvian South Coast. Paper presented at the 73rd Annual meeting of the Society for American Archaeology, Vancouver, British Columbia. Paper was presented as part of an invited symposium titled
Regional or State Presentations


http://www.climatechange.umaine.edu/grad/Seminar/agassizprogram08.html


Maasch, K. Oct. 29, 2007. Holocene climate variability / Invited lecture on climate change given at the University of Tennessee, Knoxville, TN

Maasch, K. Oct. 30, 2007. The prehistory of El Niño in ancient peru / Invited lecture on climate change given along with Dan Sandweiss at the University of Tennessee, Knoxville, TN

Maasch, K. Feb. 21, 2008. Modeling long-term climate change / Invited lecture on climate modeling given at the University of Nebraska, Lincoln, NE

Mayewski, P. 29 June 2007. UM Communication Conference.


Mayewski, P. 4 April 2008. Climate Change, University at Buffalo.


Ocampo-Raeder, V.C. April 2008. “Paying (NOT) to See Wolves: Environmental Education in an Ecotourism Project in the Madison Valley, Montana” Department of Recreation, Parks and Tourism Sciences, Texas A&M University, College Station: Texas.


Schauffler, M. 15 Sept 2007. New England Environmental Education Association Annual Meeting (Panel discussion: How can we better teach about global climate change?)

Schauffler, M. 5 Oct 2007. Maine Science Teachers Association Annual meeting: Workshop: Working with online environmental data to answer questions about environmental change


Smorodin, V. Organizing a Technical Meeting and a Seminar at the Central Maine Power: “Weather technology for preventing the power lines icing caused by winter freezing rains in Maine” (together with Prof. N. Fukuta, University of Utah, SLC), Augusta, ME, USA, January 24, 2008

Local Presentations

Borns, Jr., H.W., 12 public lectures on Maine’s Ice Age Trail: Down East to historical societies, high schools, etc.


Kelley, A.R.  April 30, 2008. Economic Minerals (Science Day for Area Schools)


Maasch, K.  Feb. 2, 2008. What we know about climate change / An invited lecture given at Hancock County Focuses on Climate Change Forum at the Unitarian Universalist Church of Ellsworth

Maasch, K.  May 9, 2008. High-resolution regional model simulations of climate change in the northeastern United States / Presented current research on climate modeling at the Climate Change Institute's annual symposium.
http://www.climatechange.umaine.edu/grad/Seminar/program.pdf


Mayewski, P.  26 July 2007. Climate Change, Portsmouth Library, NH


Smorodin, V. The Agassiz Conference, Climate Change Institute, Orono, ME, USA, May 14-15, 2007


**Conferences/symposia/meetings attended:**

**International:**


Fastook, J.L. September 2007. West Antarctic Ice Sheet Meeting
http://neptune.gsfc.nasa.gov/wais/Sterling, VA

Fastook, J.L. December 2007. Fall American Geophysical Union Meeting
http://www.agu.org/meetings/fm07/?content=search&show=detail&sessid=75 San Francisco, CA

http://www.lpi.usra.edu/meetings/lpsc2008/Houston, TX


Fei, Chai. October 2007. PICES Annual Meeting Victoria, Canada.

Fei, Chai. January 2008. A Joint Workshop between Xiamen University and Hong Kong on Marine Environmental Research, Hong Kong, China.


Hamilton, G. March 10-14, 2008. UNAVCO Science Workshop Boulder CO.


Kurbatov, A. October 4-5, 2007. WAIS Divide ice core Project Science Meeting, http://www.waisdivide.unh.edu/, Kings Beach, California USA


Sandweiss, D. December 5-9, 2007. Council of Graduate Schools Annual Meeting Seattle, WA

Sandweiss, D. August 1-4, 2007. Coastal South America Archaeology Conference Lima, Peru

National:


Maasch, K. March 1-7, 2008. 9th meeting of the Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy
http://www.pittcon.org/archive/2008/index.html


**State:**


Belknap, D.F., April 11, 2008. Geological Society of Maine spring meeting - student presentations. DFB abstract coordinator, Bowdoin College, Brunswick, ME.


Kelley, A.R. October 19, 2008. Geological Society of Maine Fall Meeting Poland Spring, Maine


Schauffler, M. 5 October 2007. Maine Science Teachers Association annual meeting, Gardiner HS, Gardiner ME.
Regional


Kelley, J.T. June 3, 2008. Northeast Climate Change Amherst, MA


Sandweiss, D. October 13-14, 2007. 26th Annual Northeast Conference on Andean Archaeology and Ethnohistory
http://www.ithaca.edu/andean/news.php


Zaro, G. October 13-14, 2007. NE conference of Andean Archaeology and Ethnohistory Ithaca, New York, USA

Local


http://www.climatechange.umaine.edu/grad/events.html Orono, ME

Maasch, K. May 8-9, 2008. 16th Hal Borns Symposium, University of Maine http://www.climatechange.umaine.edu/grad/events.html

Ocampo-Raeder, V.C. May 2008. Borns Symposium (Climate Change Institute), University of Maine

Zaro, G. May 8-9, 2008. 16th Annual Borns Symposium, Climate Change Institute, UMaine Orono, Maine, USA
**Research Expeditions and Field Trips**

Belknap, Daniel, F., July, August, September and 12/01/07. Salt marsh research for theses of Kristin Wilson and Holly Theriault. Multiple trips for coring, ground-penetrating radar, and surficial samples. Coastal Maine from Wells to Lubec.

Belknap, Daniel, F., 7/30-8/02/07. Vibracoring research cruise, R/V Argo Maine, Penobscot Bay, ME in support of Laura L. Brothers Ph.D. research.


Chawathe, S. February 12, 2008. Climate Change Institute's Field Trip and Meeting.


Kelley, A.R. September 27 & 28, 2008. Climate Change Institute Annual Field Trip


Kelley, J.T. June 22-25, 2008. Field trip along the Northern Ireland coast to see sea level rise evidence.


Kelley, J.T. June 11-18, 2007. Field trip to see sand dune mines, Morocco.

Kurbatov, A. November -December, 2007 Detroit Plateau, Antarctic Peninsula Recovery of 133 meters ice core as part of International Polar Year project with Chile and Brazil


Ocampo-Raeder, V.C. August and December 2007. Western Andean Valley, research in human ecology of crayfish management.

Sandweiss, D. July 1-August 14, 2007. Field work in Peru on Holocene upwelling on Peru coast; and on climate and cultural change in north central Peru.


Zaro, G. May 20-June 18, 2008. La Milpa Archaeological Project, Belize, Central America: Preliminary Excavations at a Late Classic period Maya City.


**Other Indicators:**


**Media Presentations Created**

Kurbatov, A. Web site CASA Climate of the Antarctica and Southern America Joint Brazilian-Chilean-US Project [http://www.casa.aq](http://www.casa.aq)

Mayewski, P. TV. Climate Change Overview CBS 60 Minutes.


Schauffler, M. Website. Maine Environmental Monitoring and Assessment Program Index: an annotated and searchable index of environmental monitoring programs in Maine with links to sources of data. www.memapindex.org

Creative Activities:

Sandweiss, D. Inclusion of work in public collection. April 2008 forward. 1 photograph of Quebrada Jaguay (early fishing site in Peru) selected to be exhibited in the Human Path Gallery, in the "Bridge of life" Museum of Biodiversity, designed by the architect Frank Gehry and located in Panama City, Panama. http://www.biomuseopanama.org/en/

Service – To Profession


Belknap, D.F., College/University Program Review, NEASC University external review committee, Chair of Standard 2 – Evaluations and Assessments Professional Association OfficerElected Vice President Northeastern Section Geological Society of America - 2008

Chai, Fei, Conference Chair/Co-Chair, PICES Working Group on Ocean Iron Fertilization in the North Pacific

Chai, Fei, Advisory Board, International Advisory Committee for the State Key Lay at the Xiamen University

Chai, Fei, Program Committee Member, London Convention Scientific Group on Ocean Iron Fertilization

Chai, Fei, Conference Section Chair, The Fourth International Ocean-Atmosphere Conference
Chawathe, S. Program Committee Member The 28th ACM SIGMOD International Conference on Management of Data (SIGMOD 2008).

Chawathe, S. Program Committee Member The 19th International Conference on Database and Expert Systems Applications (DEXA 2008).

Chawathe, S. Program Committee Member The International Workshop on RFID Data Management (RFDM 2008).

Chawathe, S. Program Committee Chair Program Chair, the 10th IEEE International Conference on Intelligent Transportation Systems (ITSC 2007).

Chawathe, S. Program Committee Member The 18th International Conference on Database and Expert Systems Applications (DEXA), September 2007.


Chawathe, S. Professional Association Officer 1/2005–present. IEEE Intelligent Transportation Systems Society (ITSS). Member of the Board of Governors.

Chawathe, S. Award Committee Member 2/2007–present. IEEE Intelligent Transportation Systems Society (ITSS). Member, Dissertation Award Committee.

Chawathe, S. Professional Association Officer 1/2008–present. IEEE Maine Section. Chair, Communication and Computer Societies' joint chapter.


Dieffenbacher-Krall, A. Grant Review Board Member, Panelist, Paleo-Perspectives on Climate Change, National Science Foundation, April 22-24, 2008.

Fastook, J.L. Conference Section Chair. March 2008 International 39th Lunar and Planetary Science Conference, Houston, TX, "MARS: ICE ON THE GROUND AND IN THE GROUND"

Fastook, J.L. External reviewer and interviewer for final candidates for senior lecturer position in ice sheet modeling at Department of Physical Geography and Quaternary Geology, Stockholm University.


Jain, S. Grant Review Board Member. Environmental Sustainability Program, National Science Foundation (Member, Review Panel).

Jain, S. Conference Section Chair. Session Chair, Multimodel Ensemble Forecasts for Climate and Streamflow. American Geophysical Union Fall Meeting, December 2007, San Francisco, Calif.

Kelley, J.T. Editorial Board Journal of Coastal Research

Kellogg, T. Geological Society of America campus representative to Univ. of Maine

Kellogg, T. Accreditation Team Member 1/16/08 - Evaluation of Asst. Prof. Heather Sloan at Lehman College for promotion to Associate Professor

Mayewski, P. Chair, International Trans Antarctic Scientific Expedition Project Office Director, Chair.

Mayewski, P. Antarctica and the Global Climate System Committee, Member for SCAR (Scientific Committee for Antarctic Research).

Mayewski, P. Co-editor “Antarctica Climate Change and the Environment” for SCAR

Mayewski, P. Organizer and first author: “State of the Antarctic and Southern Ocean Climate System (SASOCS)” for SCAR.


Norton, S. Grant Review Board Member. Board of Directors, Metals in the Human Environment, National Science and Engineering Research Council, Canada (2008-2010).

Norton, S. Editorial Board. Board of Editors, Environmental Monitoring and Assessment (1993- present)

Sandweiss, D. Founding Editor, Andean Past (Cornell Latin American Studies Program)

Sandweiss, D. Editorial Board Member, Chungará Revista de Antropología Chilena

Sandweiss, D. Editorial Board Member, Society for American Archaeology Press
Sandweiss, D. Editorial Board Member, Latin American Antiquity (published by the Society for American Archaeology)

Sandweiss, D. Contributing Editor, Review of Archaeology

Sandweiss, D. Committee Chair, Committee on the Americas, Society for American Archaeology

Sandweiss, D. Recommendation letter for C. Fred T. Andrus for the University of Alabama College of Arts and Sciences Leadership Board Faculty Fellow Award.

Sandweiss, D. Recommendation letter for Michael Malpass for Dana Professorship in Social Sciences, Ithaca College, NY.

Sandweiss, D. Tenure review letter for Kevin Vaughan, Purdue University Department of Anthropology.

Sandweiss, D. Chair and Organizar, Symposium on Quebrada Jaguay: Maritime Adaptations and the Paleoindian to Archaic Occupation of Southern Peru. 73rd Annual Meeting of the Society for American Archaeology, Vancouver, BC, Canada.

Sandweiss, D. I operate an Andean Studies email information distribution list.

Schauffler, M. Advisory Board member for NSF Grant (PI Maine Math & Science Alliance) to develop technology-based genetics education activities.

Smorodin, V. Chairing at the Chemical Biophysics Symposium, Toronto, ON, Canada, April 20-22, 2007

Zaro, G. Manuscript reviewer for Chungará, Revista de Antropología Chilena (peer-reviewed journal)

Zaro, G. Manuscript reviewer for Journal of Archaeological Science (peer-reviewed journal)

Service – To Department


Belknap, D.F., Chair: Introductory Courses Instructor replacement ad hoc committee.


Chai, Fei, Peer Committee Member.

Chawathe, S. Computer Science Department Committees, University of Maine.

Chawathe, S. Member, Graduate Committee.

Chawathe, S. Member, Curriculum Committee.

Chawathe, S. Member, Policy Advisory Committee.

Chawathe, S. Member, Stillman Scholarship Committee.

Dieffenbacher-Krall, A. Building manager, Sawyer Research Center, since 2007.

Fastook, J.L. Graduate Committee, Peer Committee.

Hamilton, G. Chair, Policy and Advisory Committee; Climate Change Institute.

Hamilton, G. Chair, Ad Hoc Committee on Website; Climate Change Institute.

Kelley, J.T. Department Chair.

Kellogg, T. Member, Earth Sciences Graduate Committee.

Maasch, K. Department of Earth Sciences Graduate Committee.

Maasch, K. Climate Change Institute Peer Committee, chair.

Mayewski, P. Director, Climate Change Institute.

Ocampo-Raeder, V.C. Curriculum development.

Roscoe, P. Chair of PAC.

Roscoe, P. Chair of James Acheson's peer review committee.

Roscoe, P. Member of Lisa Neuman's peer review committee.

Roscoe, P. Presentation to Anthropology Club.

Roscoe, P. Drafted proposal for Anthropology’s PhD Intent to Plan; attended multiple meetings related to same.
Sandweiss, D. (for Anthropology Dept.). Chair Peer review committee for Brian Robinson

Sandweiss, D. (for Climate Change Institute) Co-chair, Churchill Exploration Fund Selection Committee

Sandweiss, D. (for Climate Change Institute) Member, Peer review committees for Gordon Hamilton, Constanza Ocampo-Raeder

Schauffler, M. Represent the Center for Science and Mathematics Education Research Center and the Climate Change Institute at education meetings and conferences.

Smorodin, V. Organizing a seminar of Prof. Norihiko Fukuta (Dept. of Meteorology, University of Utah, Salt Lake City, UT) “Global Warming, ” at the Climate Change Institute, University of Maine, January 25, 2008 (as a Host Professor)

Zaro, G. (1) Graduate Coordinator, Quaternary and Climate Studies

Zaro, G. (2) Graduate Board Member

**Service – To College**

Chawathe, S. 1/2005–present. Support for Science Students, University of Maine. Member, Faculty Advisory Board. Advising a residential education and support program for students studying science.


Fastook, J.L. Climate Change Institute Peer and PAC, Computer Science Chair Search

Ocampo-Raeder, V.C. Center for Student Innovation: Collaborating in developing a curriculum for courses relating to market-based conservation enterprises.

Sandweiss, D. Member, McBride Professorship Committee

Sandweiss, D. Member, Bailey Professorship Committee

**Service – To University**

Belknap, D.F., Faculty Senate.
Belknap, D.F., Provost’s Faculty Advisory Committee.

Belknap, D.F., NEASC University external review committee, Chair of Standard 2 – Evaluations and Assessments.

Chai, F., Faculty Senate.


Dieffenbacher-Krall, A. Tour of lab and equipment for biology course “Paleoecology”, January 2008

Hamilton, G. Faculty representative, UMaine Sustainability Alliance

Hamilton, G. Faculty representative, UMaine Green Loan Fund

Jain, S. Faculty Representative, President's Council on Disabilities

Jain, S. Proposal Review Panel, UMaine Environmental Solutions Initiative

Jain, S. Member, UMaine Climate Change Report Committee (Chairs: G. Jacobson and I. Fernandez)


Kelley, J.T. Sea Grant program personnel review

Maasch, K. Member, Hudson Museum Advisory Board

Norton, S. Advisory Board, Master of Science in Teaching Program

Ocampo-Raeder, V.C. Environmental Solutions Initiative: Collaborating in the strategic development of an environmentally and socially responsible management plan for Penobscot County.

Ocampo-Raeder, V.C. Center for Tourism Research and Outreach (CenTRO): Collaborating in development of an outreach program for the promotion of sustainable tourism operations in Maine.

Roscoe, P. Member of Steering Committee for Climate-Change/Engineering EPSCOR proposal

Roscoe, P. Co-PI on Climate-Change/Anthropology's IGERT proposal
Sandweiss, D. Co-Chair, Cultural Affairs/Distinguished Lecture Series Committee

Sandweiss, D. Chief Cooperating Curator, Hudson Museum Board of Cooperating Curators

Sandweiss, D. Co-Chair, Dean of the College of Education and Human Development Search Committee

Sandweiss, D. Chair, Provost’s International Advisory Team

Sandweiss, D. Chair, Dean Robert Dana Review Committee

Sandweiss, D. Member, Castle Professorship Selection Committee (College of Engineering)

Sandweiss, D. Member, Long Professorship Selection Committee (College of Engineering)

Sandweiss, D. Member, University Research Council

Sandweiss, D. Member, Provosts Council

Sandweiss, D. Member, Deans Council

Sandweiss, D. Member, NEASC Executive Committee

Sandweiss, D. Member, 3000/75 Committee

Sandweiss, D. Member, Growth Model Committee

Sandweiss, D. Member, Academic Affairs Budget Advisory Group

Zaro, G. Graduate Board--Graduate Student Environment Committee

Service – To University System

Sandweiss, D. Member, Post-tenure review study committee

Service – To State Government Agencies

Belknap, D.F., Member of Wells National Estuarine Research Reserve Management Authority by Gubernatorial Appointment. Meetings quarterly, started January 24, 2000 (in Wells). (Service to State).
Chai, F., Working Group for the Climate Change Assessment for the State of Maine.

Kelley, J.T. StateMap Advisory Committee

Kelley, J.T. Maine Geological Survey

Schauffler, M. Assist outreach staff from Maine DEP, DMR, and Acadia National Park with educational activities and linking with teachers

**Service – To General Public/Local Community**

Dieffenbacher-Krall, A. Collected lake sediment cores from Toothaker Pond for Toothaker Pond Association 9/22/07.

Dieffenbacher-Krall, A. Tour of Paleoecology lab and general lecture to 2 undergraduate classes from College of the Atlantic 9/19/07.

Hamilton, G. Board of Directors, Maine Global Climate Change, Inc.


Kellogg, T. 4-6 contacts with the public each year, answering questions on fossils.

Norton, S. Environment and Energy Committee, Bucksport, Maine (2007-)

Sandweiss, D. Board member, Bangor Foreign Policy Forum

Schauffler, M. Helped found the Belfast Bay Watershed Coalition and link them with K-12 teachers in the community for environmental research projects. Help citizens interested in monitoring to set up and carry out monitoring projects. Help organize annual migratory Bird Day activities in Belfast.

Smorodin, V. Initiating a seminar and a discussion of the technical project on preventing the power lines icing and blackouts caused by winter freezing rains, the Central Maine Power, Augusta, ME, January 24, 2008.

Zaro, G. (1) I gave a public lecture at Dover-Foxcroft Public Library, April 16, 2008

**Service – To Pre-K-12 Education**

Chai, F., Gave two lectures for "The Global Change Workshop of Teachers".

evaluating entries for the Science Service’s Intel Science Talent Search (formerly, the Westinghouse Competition).


Dieffenbacher-Krall, A. Tour for ~200 middle and high school students 5/1/08

Dieffenbacher-Krall, A. Tour and field demonstration for 12 4-6 graders, Stillwater Montessori School 5/22/08.

Hamilton G. Multiple presentations in local schools;

Hamilton, G. 4 school/youth group visits hosted in our lab.

Kelley, J.T. Co-Hosted Stones, Bones, Bugs and Ice, a Tour of Earth Science, Anthropology and Climate Change for local middle-high school students, May 1, 2008.

Schauffler, M. Support teachers with scientific guidance and equipment to undertake local research and monitoring projects with students.

**Service – Manuscripts/Proposal Reviewed**

Belknap, D.F.
Proposals Reviewed: 2
NSF Proposals (any other information is confidential).

Chawathe, S.
Manuscripts Reviewed: 15
Proposals Reviewed: 2 [numbers are approximate... don't have all records handy; the manuscripts reviewed is almost certainly an underestimate.]

Dieffenbacher-Krall, A.
Manuscripts Reviewed: 2
Two manuscripts reviewed for journal Hydrobiologia regarding plant macrofossil taphonomy and a sediment collection device.

Fastook, J.L.
Manuscripts Reviewed: 3
Proposals Reviewed: 2
Journal of Geophysical Research: 1
Computers and Geosciences: 1
Geophysical Research Letters: 1
National Science Foundation: 2
Hamilton, G.
Manuscripts Reviewed: 7
Proposals Reviewed: 4
Proposal reviews for NASA, NSF, UK Natural Environment Research Council

Jain, S.
Manuscripts Reviewed: 5
Proposals Reviewed: 5
Proposals: National Science Foundation: Environmental Sustainability Panel (4) UMaine Environmental Solutions Initiative (1)

Kurbatov, A.
AGU one manuscript was reviewed

Kelley, J.T.
Manuscripts Reviewed: 10
Proposals Reviewed: 3
Papers for Geological Society of America Bulletin (2), Geology, Quaternary Research (2), Journal of Geology, Journal of Coastal Research (4), 1 book review for publisher, 1 DOE proposal, 1 Army Corps of Engineers proposal, 1 CICEET proposal

Maasch, K.
Manuscripts Reviewed: 4
Four manuscripts (2 Paleoceanography, 2 Geophysical Research Letters)

Norton, S.
Manuscripts Reviewed: 20
Proposals Reviewed: 5
For the National Science Foundation and various journals

Roscoe, P.
Manuscripts Reviewed: 2
MS submissions to journals: Oceania; Journal of Asian-Pacific Issues

Sandweiss, D.
Manuscripts Reviewed: 16
Proposals Reviewed: 4
Manuscripts reviewed:
Chungara: 1
Current Anthropology: 1
Ethics in Science and Environmental Politics Essay contest mss: 2
Journal of Archaeological Science: 1
Proceedings of the National Academy of Sciences: 3
Quaternary Science Reviews: 1
Science: 1
Society for American Archaeology Press Book Prospecti: 6

Proposals reviewed:
National Geographic Society: 2
National Science Foundation: 2

Smorodin, V.
Reviewing the papers for a Journal of Chemical Physics, 2007

Zaro, G.
Manuscripts Reviewed: 3
Proposals Reviewed: 0
(1) Title: Difficulties in rejecting a local ancestry with mtDNA haplogroup data, an example from the south central Andes (Journal of Archaeological Science)
(2) Title: Agricultural slope management and soil erosion at La Laguna, Tlaxcala, Mexico. (Journal of Archaeological Science)
(3) Title: The impact of ENSO in Atacama and the Australian arid zone: Explanatory time-series analysis of archaeological records (Chungara, Revista de Antropologia Chilena

Service – Television/Radio/Newspaper Interviews

Belknap, D.F., 2 (I can’t find my notes on the details).


Hamilton, G.
Bangor Daily News; Portland Press Herald; Associated Press; Rolling Stone.

Kelley, J.T.
Bangor Daily News (2)
USA Today (2)
New York Times
Portland Press herald (2)
Channel 5 Bangor (TV)
Kurbatov, A.
Chilean TV Interview on CASA initiative

Mayewski, P.A.
CBS 60 Minutes
Earth and Sky  National Public Radio
Bangor Metro
Superconsciousness
207 MSNBC
various others

Service – Other

Belknap, D.F., Invited Panelist Maine Sea Grant Symposium “Maine Science for Maine People” April 28, 2008, Orono, ME.

Belknap, D.F., More than 50 e-mail and telephone contacts with citizens and agencies with questions on geology and coastal issues.


Special Public Service Recognition/Awards/Honors Received

Kelley, J.T. Invited Speaker at International Meeting in Ireland, June, 2008

Other: (e.g. special contacts)

Zaro, G. (1) Coordinated guest lecturer Dr. Cecil Lewis (Oklahoma University) to present his research to UMaine on ancient and modern DNA and its implications for Peopling of South America. Dr. Lewis also participated in a meeting of INT500: Climate, Culture, and the Biosphere with an emphasis on Peopling of South America.
(2) Coordinated guest lecturer Dr. Jonathan Sandor (Iowa State University) to present his research to UMaine on long-term impacts of agricultural practices on soil chemistry in New Mexico and Peru. Dr. Sandor also participated in a meeting of ANT420: Human Impacts on Ancient Environments.
Goals for Next Year

The direction of the Climate Change Institute is vitally linked to the widely accepted realization that an understanding of climate change and its implications are absolutely critical to the future of society, ecosystems, economy, and governance. CCI has been a leader in developing the scientific basis for this realization. As a consequence CCI must and will continue to experience an ever-broadening climate change agenda based within CCI and upon interaction with other disciplines, University of Maine research and academic units, the public, and national and international partners.

CCI is already faced with rapidly emerging opportunities for application of its findings to critical issues such as climate change induced: hazards (eg., flood, coastal erosion, drought, heat), renewable energy (eg., off shore wind power), adverse health (eg., heat, moisture, disease, dust, species in jeopardy), poverty (local to global), sustainability challenges (eg., energy, agriculture, urbanization), and individual to private to governmental decision making.

To meet these challenges and opportunities the Climate Change Institute has successfully competed for federal funds, but it also requires resource flexibility not typically available through federal agency programs that will allow the Institute to continue to grow as a research catalyst within the University of Maine and to explore and contribute to new innovations in the understanding and application of climate change research in its most universal (local to global) context.

To make these critical contributions to society CCI pursues a multi-prong approach that includes the following mechanistic themes:

(1) Catalyst for Change
(2) Bridge Builder
(3) Leveraging Solutions
(4) Cutting Edge Approaches
(5) On the Ground Solutions

We address these mechanistic themes by building on our strengths and creating new partnerships within the University, throughout the State, and globally.

We plan to create new partnerships centered on the necessity to and our ability to understand and predict climate change through innovative new mechanisms. Key unknowns exist in the prediction of climate change such as: the potential for sea level rise, the potential for abrupt climate change, the characteristics of change on regional to local scales, and the development of innovative, efficient monitoring of human impact on climate down to weather scales. New information and technologies are required to address these unknowns.

To build on our existing strengths and develop new partnerships within the University we will pursue our new association with LAAST prompted through the recent CCI-LAAST WM Keck Foundation award. We will also vigorously pursue partnerships centered on
enhanced climate prediction capability through the use of regional climate models and new innovative meteorological monitoring technology. A prime example of the application of these activities relates to the critical issue of Maine’s potential for generating off shore wind power. CCI has already established initial partnerships with AEWC, UM Engineering, MMA, and COA to pursue this goal.

To build on our existing strengths and develop new partnerships within the State and throughout the public at large we will continue our long tradition of outreach in the form of public presentations, media appearances, and website information. As an example, on 23-24 October 2008 the University of Maine and CCI will host: Climate “Change 21 – Choices for the 21st Century: An Interactive Public Forum – Environmental Festival”. This meeting is intended to attract a broad range of attendees including students, public, policy makers, researchers, business people. CCI will be used to leverage the role of CCI and other UM climate change associated research, demonstrate UM’s commitment to a green campus, demonstrate the State’s forward environmental approaches, and make the public aware of the immense opportunities for Maine and Earth’s future.

To build on our existing strengths and develop new partnerships globally we will continue our world-class reputation of organizing, leading, and bringing to successful completion major multi-disciplinary, multi-national research efforts. CCI is currently involved in several such endeavors that join CCI researchers with researchers in Asia, Antarctica, Australasia, South America under the banner of several high profile research programs (eg., ITASE, AICA, CADIP). CCI researchers are at the forefront of major scientific discoveries related to climate change and are producing major syntheses that contribute to state of the art understanding of the role of the Arctic and Antarctic in the global climate system.

Challenges and Solutions

The Climate Change Institute is seeking funding flexibility through an endowment of $10 million plus additional funds for purchase of equipment and R&D. Through such funds the Institute would be able to accelerate its internationally respected status by exploring and carefully integrating substantive new areas of climate change that will strengthen its role in the University of Maine and as a global leader in climate change research. We were successful through the concerted efforts of a very strong science team, VP Eckardt, President Kennedy, and many others in the University in our bid with WM Keck Foundation in support of the development of cutting edge technologies. These funds will allow us to make dramatic inroads into ice core processing and new environmental sensing technologies. We are still actively in search of funds to expand our climate modeling capabilities and our new, highly innovative radar technologies. The radar technology we are exploring could answer critical questions being asked by countries that are well advanced of the United States in research related to offshore wind power.

We are still in search of endowed funds that would be used for new researchers, graduate students, and exploration funds. We are working closely with VP Beers and the Development Office and Pres. Orcutt and the UM Foundation. With VP Beers we have developed proposals to individuals and organizations, undertaken visits to potential
endowers, and instituted the first UM Alumni Excursion to the Antarctic to be undertaken early in 2008. With the UM Foundation we have continued to strengthen our association with individuals contributing through the Foundation to CCI.

**Long-term Priorities**

We have several long-term priorities that we are actively pursuing:

1. Maintain our world-class multi-disciplinary research and graduate student support through continuation of federal support (NSF, NOAA, NASA).
2. Maintain our core faculty strengths and expand into new climate change research arenas.
3. Pursue a CCI endowment for CCI of $10 million as part of the UM Capital Campaign in support of new researchers, graduate students, and expeditions.
4. Develop business partnerships through activities such as regional climate modeling and radar technology.

The Climate Change Institute has established a strong, internationally renowned reputation for its contributions to the understanding of past, modern, and future climate change. As a consequence we now understand that climate and environmental change is an inescapable reality that must be addressed.

Successful outcomes of investment in the Institute will allow the Institute to maintain and enhance its pivotal role in climate change, intensify the University’s commitment to the goal of environmental sustainability, catalyze research strengths within the University, increase the opportunity for even greater support from federal funding agencies because of a broader range of Institute expertise and application, enhance the value of climate change products for the world thereby elevating even more the international profile of the University, and position the Institute for excellence in the 21st Century.