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And thank you to our colleagues who moved on during this year:

Maja Anderson, Scott Callan,
Sarah Degen, Billy Kepner, Sara Perry,
Trisha Smrecak and Margaret Wedge.

Ingrid Zabel, Development Associate



## In 2010 - 2011, PRI helped over **20,000** children nationwide find and take home fossils

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#### One plus one equals three?

In most years, that kind of prestidigitary math describes the amazing work of PRI's incredibly talented staff, as they stretch hard-won grant dollars, very generous philanthropy, publications income, and museum revenue farther than seems humanly possible.

This year, the magic numbers mean even more; in 2011, we have just begun to realize the tremendous potential of the merger of two wonderful institutions. The emerging organization will represent something much more than simple addition. I'm sure that the new synergy of expertise, subject matter, and space will be multiplied many times over.

PRI itself illustrates very well the march of life through time, accessible not only to the scientists among us, but the kid in each of us. How much more compelling is that story, now that we can merge gray fossils with green leaves, contrast geologic time with changing seasons, and bring paleontology to life in the kaleidoscopic present?

Learn more about what is happening in every corner of the new PRI, and help me spread the word far and wide about this amazing place.

Rob Mackenzie, MD

President

PRI Board of Trustees

#### 2010-2011 was a year of significant challenges and accomplishments.

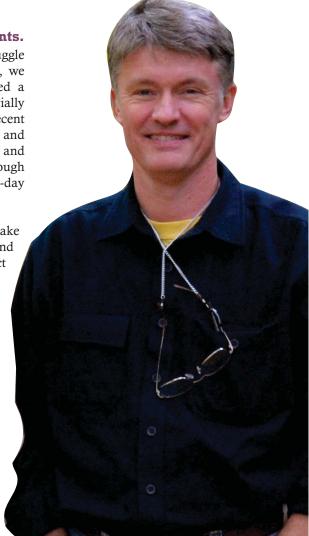
Our challenges included an unusual amount of staff turnover, and a continued struggle with fundraising in an uncertain economy. On the accomplishment side, however, we undertook a major NSF-funded renovation of our research laboratories; initiated a traveling exhibit program; expanded staff research; expanded teacher training, especially online; mounted temporary exhibits on "big events" in Earth science, including the recent Gulf oil spill and Japan earthquake; and added thousands of specimen records and images to our online collections database. Most significant of all, the Boards of PRI and the Cayuga Nature Center voted unanimously to move toward a full merger. Although this action will not be legally complete for 2-3 years, PRI assumed day-to-day management of CNC in February.

Since then we have frequently been asked why a "fossil museum" would want to take over a nature center. To us, the answer is very clear: with its 100+ acres of forest and other habitats, the Nature Center is an outdoor natural history museum, the perfect place to experience outside what visitors to the Museum of the Earth see inside – the evidence and processes of change in the Earth and its life; the effects of humans on these changes; and the nature of the science that allows us to understand them.

In these tumultuous times, these messages are more relevant and important than ever.

Warren D. Allmon

Director



Initially envisioned as a place for scientists and students to conduct original research, ten PhD scientists, along with numerous graduate and undergraduate students at Cornell University, conducted research at PRI this year.



#### Warren Allmon

Director Dr. Allmon's current research continues to have two main foci. He continues to work on the ecology, systematics, and evolution of turritelline gastropods, which are nearly ubiquitous in the marine fossil record over the past 130 million years, and also

widely distributed in modern oceans. More broadly, he also continues to work on theoretical and empirical aspects of speciation—the formation of new species—especially as it relates to patterns of nutrient availability and primary productivity in the oceans. In the past year, Dr. Allmon received a three-year grant from the National Science Foundation to combine these two interests in a collaborative comparison of evolutionary "tempo and mode" in marine mollusks from the Cretaceous of the Western U.S. and the Plio-Pleistocene of Florida. Beyond these focal areas, in addition to his ongoing interest in and writing on the history of science and teaching of evolution, Dr. Allmon also supervises Cornell graduate and undergraduate students' work on a wide variety of topics, from the causes of snail evolution, to unraveling the identity of problematic fossils from the Devonian rocks around Ithaca, to brain evolution in camels.



#### Caryln Buckler

As Education Associate, Dr. Buckler's research focuses on the efficacy of various models for communicating science to the public. She recently developed and implemented the first graduate level online courses for museum educators in the US, and has assembled a

team of informal science education professionals from across the US for a full-scale development of the project and will be seeking funding from NSF Informal Science Education in early 2012. In managing PRIs Mastodon Matrix Project, Dr. Buckler has also studied the efficacy of using citizen science projects in helping researchers gather data, and in helping the public better understand the scientific process. Dr. Buckler serves as an adjunct assistant professor of Earth and Atmospheric Sciences, SUNY, Oneonta, and adjunct professor at the Cooperstown Graduate Program in Museum Science.



#### David Campbell

Collections Assistant Dr. Campbell's main area of study is in molluscan systematics, with a specific focus on freshwater mollusks, Paleogene mollusks, and the classification of bivalves. In 2011, he worked on both the Systematic Collection Grant and the Zinsmeister

Grant. He also wrote numerous publications (see Scientific Publications for a full list) and presented his research at various meetings and symposiums.



#### **Gregory Dietl**

Dr. Dietl, Director of Collections, is a paleoecologist with a focus on the ecology and evolution of species interactions and conservation paleobiology---a new socially relevant subdiscipline in paleontology that applies geohistorical information to conserve

biodiversity and ecosystem services. His research approach is at the interface between ecology and evolutionary paleoecology. It is very much multidisciplinary in nature, integrating interests across diverse

fields of organismal and theoretical biology. Research highlights from the past year included his successful NSF-funded workshop on "Conservation Paleobiology in the Coming Decades", which brought scientists from around the world to PRI to explore how best to position this emerging field to address global environmental challenges. His publication with Karl Flessa (University of Arizona) entitled "Conservation Paleobiology: Putting the Dead to Work", published in Trends in Ecology & Evolution, received national attention. He received an NSF grant to monitor the ecological effects of the Deepwater Horizon oil spill disaster on oyster reefs in the Gulf of Mexico. The goal of this project is to obtain geohistorical baselines of pre-impact oyster reef health, which will provide much needed context for setting restoration goals. He was also an invited participant in the "Organism traits in climate change modeling" workshop sponsored by the Integrative Climate Change Biology Program (iCCB) of the International Union of Biological Sciences held in Helsinki, Finland. He also attended several professional meetings throughout the year to present his research including the Southeastern Section meeting of the Geological Society of America held in Wilmington, NC, where he was coauthor on 16 abstracts, largely an output of his highly successful NSF-funded Research Experiences for Undergraduates program in biodiversity conservation that he co-led with PRI trustee emerita Dr. Tricia Kelley at the University of North Carolina Wilmington. In addition to his extensive research, Dr. Dietl is Adjunct Assistant Professor of Earth and Atmospheric Sciences at Cornell University.



#### Richard Kissel

Dr. Kissel, Director of Teacher Programs, is a vertebrate paleontologist and scientific illustrator interested in science education and the history and nature of science. He is the Informal Education representative on the Geological Society of America's

Committee on Education, and he also teaches courses at both Cornell University and Ithaca College. Outside the classroom, Dr. Kissel's scientific research currently focuses on a group of Paleozoic tetrapods known as diadectids--the first herbivorous tetrapods. His work investigates the evolutionary history and diversity of the group, applying that information to examine questions regarding the evolution of high-fiber herbivory within a lineage and the development of the modern terrestrial ecosystem. In early 2011, he presented his findings at the meeting of the Geological Society of America, Northeast/North-Central section.



#### Don Duggan-Haas

Education Research Associate Dr. Duggan-Haas' work is currently focused upon determining the fundamental ideas that are most important for everyone to understand about the Earth system and how to help educators nurture understandings of those ideas. He's

grown especially interested in place-based education – an approach that engages learners in the close study of their local environment and using these locally grounded understandings to better understand the global Earth system. Dr. Duggan-Haas is currently serves as First Vice Chair of the Geological Society of America's Geoscience Education Division; and has played an active role in the development of the Next Generation Science Standards, which are intended to replace the 1996 National Science Education Standards.



#### Paula Mikkelsen

Dr. Mikkelsen, Associate Director for Science and Director of Publications, is a marine biologist and malacologist. She is principle investigator on two National Science Foundation grants to study the evolution of bivalve mollusks in collaboration with

colleagues: "BivAToL" (Assembling the Bivalve Tree of Life, www.bivatol.org), which produced the traveling exhibit Science on the Half Shell: How and Why We Study Evolution, and "BiTS" (Bivalves in Time and Space), which explores the evolution of two large clades of bivalves, from molecular, morphological, and paleontological viewpoints. Also near the top of her research agenda is production of a book for Princeton University Press on the marine snails of the Florida Keys, which will follow the format of the 2007 book Seashells of Southern Florida - Living Marine Mollusks of the Florida Keys and Adjacent Regions: Bivalves. Dr. Mikkelsen also received grant funding from the National Science Foundation to renovate the PRI research laboratories, including the Prep Lab in the Museum of the Earth. The renovations began in April with the grand opening in September 2011. The new labs also include BioLab, PaleoLab, and WetLab behind the scenes at PRI. These four laboratories will greatly improve the ability of staff and affiliated students to conduct competitive original research, and to communicate PRI's activities to the public.



#### Judith Nagel-Myers

Dr. Nagel-Myers, Collections Manager, has most recently focused on the NSF grant-funded Zinsmeister Collections, its curation, and the dissemination of the results of this work. As part of this grant she created a virtual exhibit on the fossils of this collection of

Antarctic mollusks, which will be launched in the course of this fall.

Her research concerns the mollusk fauna of the Devonian of New York State and paleoecological questions regarding these fossil communities. Her results have been presented this spring at the meeting of the Geological Society of America, Northeast/North-Central section. A publication on this research project will be completed within this year.



#### Robert Ross

Dr. Ross, Associate Director for Outreach, is responsible for the education and exhibits programs and oversees a wide variety of grant-funded projects. He is a paleobiologist by training and has spent much of the past 20 years immersed in science education,

particularly at the boundary between research and education. Some of his current projects include working with PRI and Cornell colleagues on the use of paleontological research in teaching the nature of science to teachers and their students; reaching rural audiences on climate change; public understanding of energy issues, especially shale gas; and cultural inertia in science concepts such as perceptions of dinosaurs.



#### Richard Waite

Dr. Waite has arrived at PRI to spend the year as a post-doctoral researcher working with Dr. Allmon. Dr. Waite received his PhD in 2010 from the University of Fribourg in Switzerland, with Dr. Allmon on his committee. During his time in Ithaca he will be

continuing his thesis work on an important but under-studied group of Mesozoic fossil snails (the nerineoids) that closely resemble Dr. Allmon's favorite turritellid snails, and several collaborative projects are already underway.

#### Conservation Paleobiology: a new field comes of age at PRI

Conservation paleobiology is a new socially relevant subdiscipline in paleontology that applies geohistorical information to conserve biodiversity and ecosystem services. This year the Paleontological Society and University of Chicago Press signed a contract to republish Dr. Dietl and PRI Trustee Dr. Karl Flessa's 2009 publication "Conservation Paleobiology: Using the Past to Manage for the Future" (Paleontological Society Paper no. 16) as a book with some updates and modifications. This highly successful publication has served as a nucleus around which a community effort in paleontology has grown directed towards the difficult task of conserving biodiversity and ecosystem services for future generations. Drs. Dietl and Flessa were also invited to contribute an article on this subject to the prestigious journal Trends in Ecology & Evolution. The publication "Conservation Paleobiology: Putting the Dead to Work", was published in January 2011 and was the cover illustration. The National Science Foundation helped this publication receive national attention.

NSF also funded Dr. Dietl's "Conservation Paleobiology in the Coming Decade" workshop held in June 2011 at PRI. The workshop brought together 19 blue-ribbon scientists from around the world with diverse backgrounds in the biological and geological sciences to draft a concise, articulate vision for the promotion of this emerging research area. The participants identified the infrastructure and outreach efforts needed to make conservation paleobiology more widespread and effective.

### 10 full-time PhD staff members



8 RESEARCH

Between July 1, 2010, and June 30, 2011, PRI scientists and affiliated students and research associates (names in bold face) published these 31 titles (plus numerous presentation abstracts and newspaper articles not listed here). (\* = peer-reviewed)

- **Allmon, W. D.** 2010. From the Director: Why glaciers matter. *American Paleontologist*, 18(4): 1.
- **Allmon, W. D.** 2010. From the Director: Biodiversity: the glory and the crisis. *American Paleontologist*, 18(3): 1.
- **Allmon, W. D.** 2011. From the Director: Darwin, domestication, and evolution. *American Paleontologist*, 19(1): 1.
- **Allmon, W. D.** 2011. From the Director: Natural history, nature study, and paleontology. *American Paleontologist*, 19(2): 1.
- \*Allmon, W.D. 2011. Natural history of turritelline gastropods (Cerithiodea: Turritellidae): a status report. *Malacologia*, 54(1-2): 159-202.
- **Allmon, W. D.** 2011. Review of "Molluscan paleontology of the Chesapeake Miocene" by Edward J. Petuch and Mardie Drolshagen. *Palaios* (doi: 10.2110/palo.2011.BR64)
- **Allmon, W. D.,** and **Robert M. Ross**. 2011. Paleontology, nature, and natural history: an old approach to "environmental education." *American Paleontologist*, 19(2): 22-25.
- \*Allmon, W. D., and U. E. Smith. 2011. What, if anything, can we learn from the fossil record about speciation in marine gastropods? Biological and geological considerations. *American Malacological Bulletin*, 29: 247-276.
- \*Coan, E. V., A. R. Kabat, & R.E. Petit. 2011. *2,400 Years of Malacology, 8th ed.* 949 + 42 pp. Online publication, www.malacological.org/publications/epubs.html.
- \*Deichmann, J. L., G. B. Williamson, A. P. Lima, & W. D. Allmon. 2010. A note on amphibian decline in Neotropical lowland forests. *Biodiversity and Conservation*, 19: 3610-3627.
- \*Dietl, G. P., S. R. Durham, & P. H. Kelley. 2010. Shell repair as a reliable indicator of bivalve predation by shellwedging gastropods in the fossil record. *Palaeogeography, Palaeoclimatology, Palaeoecology,* 296:174-184.
- \*Dietl, G. P., & K. W. Flessa. 2011. Conservation paleobiology: putting the dead to work. *Trends in Ecology & Evolution*, 26: 30-36.
- **Durham, S.** 2011. Fossil Focus: Ecphora. *American Paleontologist*, 19(2): 32.
- **Durham, S.** 2011. Fossil Focus: Fossil march fly. *American Paleontologist*, 19(1): 32.
- Kelley, P. H., G. P. Dietl, & L. W. Ward. 2011. Plio-Pleistocene stratigraphy and paleontology of southeastern North Carolina. In: Taylor, K. B., & J. C. Reid (eds.), Field Trip Guidebook 60th Annual Meeting, Southeastern Section, Geological Society of America, Wilmington, North Carolina, March 2011.

- **Kissel, R. A.** 2010. Book Review: Froggy dearest. *American Paleontologist*, 18(3): 28-29.
- **Kissel, R. A.** 2011. Book Review: Coloring carnosaurs. *American Paleontologist*, 19(1): 29-30.
- **Kissel, R. A.** 2011. Book Review: Phylogeny, form, & function oh my!. *American Paleontologist*, 19(2): 28-29.
- **Kissel, R. A.** 2010. The Nature of Science: Creating (pre)history. *American Paleontologist*, 18(3): 23-24.
- **Kissel, R. A.** 2010. The Nature of Science: Devonian delivered. *American Paleontologist*, 18(4): 26-27.
- **Kissel, R. A.** 2011. The Nature of Science: The evolving dinosaur. *American Paleontologist*, 19(2): 26-28.
- **Kissel, R. A.** 2011. The Nature of Science: A knight, his king, and the grass beneath their feet. *American Paleontologist*, 19(1): 26-27.
- \*Kosloski, M. E. 2011. Recognizing biotic breakage of the hard clam, *Mercenaria mercenaria* caused by the stone crab, *Menippe mercenaria*: an experimental taphonomic approach. *Journal of Experimental Marine Biology and Ecology*, 396: 115-121.
- **Mikkelsen, P. M.** (ed.) 2010. Why study the Tree of Life? The scientists speak. American Paleontologist, 18(3): 10-13.
- \*Mikkelsen, P. M. 2011. Speciation in modern marine bivalves (Mollusca: Bivalvia): insights from the published record. American Malacological Bulletin, 29: 217-245.
- \*Petit, R.E. 2010. The Magellanic Mollusca of Rochebrune and Mabille. *Zootaxa*, 2723: 41–65.
- \*Polly, P. D., J. T. Eronen, M. Fred, G. P. Dietl, V. Mosbrugger, F. Scheidegger, J. Damuth, N. C. Stenseth, & M. Fortelius. 2011. History matters: ecometrics and integrative climate change biology. *Proceedings of the Royal Society of London B: Biological Sciences*, 278: 1131-1140.
- \*Schnetler, I., & R.E. Petit, 2010. Revision of the gastropod family Cancellariidae from the Paleocene of Nuussuaq, West Greenland. *Cainozoic Research*, 7(1-2): 3-26.
- **Smith, U.** 2010. Fossil Focus: Archimedes bryozoan. *American Paleontologist*, 18(4): 32.
- **Smith, U.** 2010. Fossil Focus: The New Zealand Moa. *American Paleontologist*, 18(3): 32.



PUBLICATION is one of our core missions, both historically and currently. Our publications remain popular, relevant, and scientifically important. Bulletins of American Paleontology, first published in 1895, is the nation's oldest paleontological journal. We produce three other series: Palaeontographica Americana, our occasional monographic series; American Paleontologist, our quarterly magazine; and Special Publications, including the ever-popular Ithaca is Gorges and other standalone books. We offer electronic and print subscriptions to BAP and sell our in-print publications online at Amazon.com and the Museum of the Earth website. We also offer current publications, along with selected wares from the Museum of the Earth Store, at annual meetings of the Geological Society of America and the Mid America Paleotology Society. Production is done entirely in-house by our small publications staff; printing is out-sourced to a variety of excellent printers both locally and nationally. PRI Publications also serves as publications distributor for The Paleontological Society's "Papers" series that accompany its annual short courses at GSA meetings; offering these publications brings additional traffic to our online bookstore. Despite the lagging economy, book sales for PRI Publications continue to be extremely healthy.

This fiscal year, while we awaited completion of three upcoming volumes in the special publications series, we focused on producing extra numbers of *Bulletins of American Paleontology*, launching three new volumes including our largest-to-date: a 550-page double number on some very showy fossil gastropods from the Dominican Republic Project. All three volumes have been popular with academic and amateur audiences, and have attracted new subscribers, continued renewals, and increased interest in our electronic access option.

The single down point during this fiscal year was *American Paleontologist* magazine. Content is varied and regularly receives good reviews, but our small circulation (now less than 1,000) is not sufficient to maintain a healthy base of paid advertising. We have reluctantly decided to cease publication of AP in its current form at the end of 2011. Currently we are conducting research to determine its replacement.

#### FY2011 Publications:

American Paleontologist magazine: Fall 2010 on Exploring the Tree of Life; Winter 2010 on Glaciers of the American West; Spring 2011 on Corn – aMaizeing Evolution!; Summer 2011 on State Fossils.

Neogene Tonnoidean Gastropods of Tropical and South America; Contributions to the Dominican Republic and Panama Paleontology Projects and Uplift of the Central American Isthmus, by Alan Beu, August 2010, 550 pp., 79 pls., ISBN 978-0-87710-487-2, *Bulletins of American Paleontology* no. 377-378.

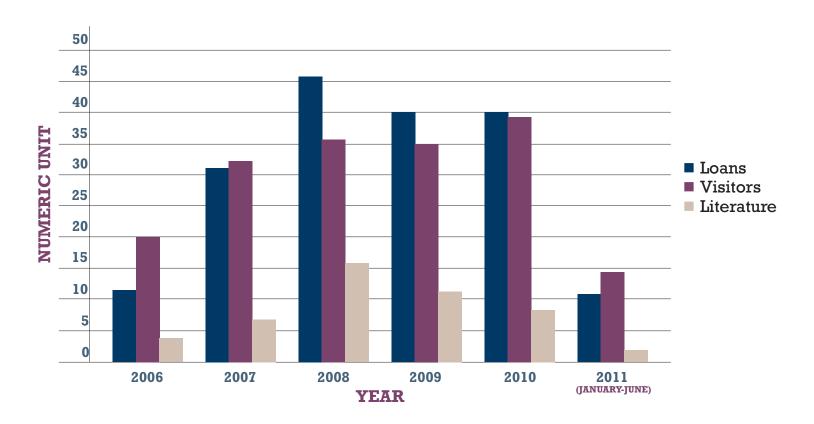
Upper Cambrian Chitons (Mollusca, Polyplacophora) from Missouri, U.S.A., by John Pojeta Jr., M. J. Vendrasco, and Guy Darrough, September 2010, 81 pp., 23 pls., ISBN 978-0-87710-488-9, *Bulletins of American Paleontology* no. 379.

The North American *Holocystites* Fauna (Echinodermata: Blastozoa: Diploporita): Paleobiology and Systematics, by T. J. Frest, H. L. Strimple, and C. R. C. Paul, March 2011, 142 pp., 14 pls., ISBN 978-0-87710-493-3, *Bulletins of American Paleontology* no. 380.

550 pages on the Dominican Republic Project

10 COLLECTIONS

#### Scientific use of PRI's collections 2006-2011





COLLECTIONS 11

## \$371,802 in NSF funding for collections curation

**FY2011** saw significant progress in specimen curation, making PRI's scientifically important collection - one of the largest in the United States - more accessible to researchers, students and educators. Our curatorial efforts focused on two ongoing NSF-funded projects.

The first is a 2-year, \$497,100, NSF-funded project to reorganize and computerize PRI's non-type systematic mollusk collection. This project has resulted (or will result) in the installation of nearly 4000 new compactorized drawers to the Raymond Van Houtte Collections Wing (nearly doubling PRI's collection storage capacity); the curation and databasing of the Harris-Palmer collection of Paleogene mollusks from the southeastern US (the formative nucleus around which PRI's entire collection has grown); and the reorganization and basic curation of the non-type systematic Recent and fossil mollusk collection. This project will make the entire PRI mollusk collection---the backbone of PRI's collection---fully functional and accessible to both the scientific and educational communities.

The second is a 2-year, \$246,504, NSF-funded project to database the William Zinsmeister Antarctica collection, which was transferred to PRI in spring of 2009 from Purdue University. The Zinsmeister collection may be the world's largest and most comprehensive collection of Antarctic fossil molluscs, containing approximately 5,510 lots with approximately 22,000 specimens of Cretaceous-Eocene fossil mollusks from Seymour Island, Antarctica, including bulk samples from measured Cretaceous-Tertiary (KT) boundary sections.

The number of scientific loans (40) in 2010 matched the level of usage in 2009, which was the second highest total in PRI's history. Data so far for 2011 are on track to maintain the current level of usage. Thirty-nine professional and student researchers also visited the collections in the 2010 calendar year, with 2011 data on pace to maintain the level of usage established in 2007. PRI's collections were also cited in five professional and student publications in the 2010 calendar year—a level that is comparable to reported use at several much larger peer institutions.

The PRI's collection continued to grow throughout the year, with material being donated from around the world. Examples of new accessions include: trilobites and ichnofossils from the Cambrian Indian Springs Lagerstätte of western Nevada collected by Loren Babcock (PRI Acc # 1592); dredge samples of modern mollusks and corals from off the coast of Puerto Rico collected by Austin Hendy (PRI Acc# 1596); and Early Permian bivalves from Australia collected by Linda Ivany (PRI Acc # 1600).

Our education programs cover a broad range of content, audiences, and geography: from the geology of Central New York to global climate change; from teaching evolution to teacher professional development. Recognizing that we exist in an increasingly "smaller" world, PRI's education programs are designed to bridge the gap from what's local to what's global.

#### Mastodon Matrix Project™

The popularity of the Mastodon Matrix Project<sup>TM</sup> – one of our citizen science programs – continues to increase, with 3,346 new participants in 2011 and over 60,000 participants since it started in 2000. Recent publicity for the project has reached more than 16 countries, from Indonesia and India to Kazakhstan and Scotland. Participants have come from every state in the US, as well as Canada, China, Scotland, Sweden, Germany, and Italy.

#### Fossil Finders

Fossil Finders was in its third of a four-year project to develop teacher professional development and 5th to 9th grade curricula using fossils, focusing on evolution, geologic time, and other major science concepts. The project, with Cornell Associate Professor of Education Barbara Crawford, engages students in authentic research on fossils from the renowned fossil-rich outcrops of Upstate NY. In the project, groups of teachers from across NYS and the US each gathered for a week of professional development for two consecutive summers. In summer 2011, a small subset of the teachers from the two groups came to Ithaca to help produce curricula and publications stemming from the project. The project develops curriculum and resources, including an interactive website, for elementary and middle school students and their teachers. The students collect data on fossils (over 1,000 specimens by end of FY11) that they can use to investigate the response of fossil organisms to Devonian environmental change. The end goal of Fossil Finders is to improve teacher and student understanding of geologic and evolutionary concepts, and of the nature of science.

This year, we worked with 20 teachers from 11 states from across the country, who worked with students in 77 classes and 1,500 students. Over the past three years, students in Fossil Finders have collected data on 10,073 specimens for research on Devonian fossils.

#### **Tracking Climate in your Backyard**

Our collaboration with 4-H continued with PRI staff traveling to two 4-H educator conferences downstate to offer training and professional development on the curriculum produced in 2009. This curriculum is a hands-on, activity-based curriculum designed to teach 4-H youth about weather and climate. Over 20 Cooperative Extension educators from across New York participated in the workshop.

#### **Teacher-Friendly Guides™**

PRI provides teacher professional development through the intensive programming that accompanies the publication of our Teacher-Friendly Guides on regional geology, encouraging Earth science teachers to use the local environment as a primary teaching tool in their classrooms.

#### This year, PRI educators:

- Traveled to seven states to hold two one-day advisory panels and six 2.5-day professional development workshops
- Provided professional development to 91 teachers from 18 states, thus reaching more than 4,000 students
- With these 91 teachers, the goal is to produce 97 Virtual Field Experiences (1 group VFE per 2.5-day PD and 1 VFE produced by each educator). These VFEs will be available at virtualfieldwork.org
- Collaborated with nationally recognized institutions like
  Cornell University, the Denver Museum of Nature and
  Science, the Field Museum of Natural History, La Brea
  Tar Pits, Google, KIPP Schools, the JOIDES Resolution,
  and Harvard University Museum of Comparative
  Zoology on a variety of education initiatives, many of
  which are funded by the National Science Foundation.
  PRI collaborated internationally, with specimen loans and
  design of exhibit components and evaluation, with the
  University of Modena, Italy for their "Darwin and
  Evolution" exhibition.



- Innovation in approaches to education, local implementation of national models such as development of hands-on Discovery Labs in the Museum, the use of "Virtual Field Experiences," and research partnerships with students and teachers with programs like the Mastodon Matrix Project.
- Curriculum resource development that works
  collaboratively with formal and informal educator-partners
  to build a collection and database of "Virtual Field
  Experiences" while helping teachers to strengthen
  knowledge and skills related to science content, educational
  technology, and teaching approaches.
- Focusing on major issues in science education through our Global Change Project and our Evolution Project, sharing best practices with formal and informal educators from across the United States and beyond.
- Bringing Earth science to all by reaching underserved audiences through exposure to science and natural history collections, helping all gain a better appreciation of the world we share.
- Involvement in national efforts to improve and expand
   Earth science education, such as the Earth Science
   Literacy Initiative, the Climate Literacy Network, the
   National Research Council's Framework for K- 12 Science
   Education, and the Next Generation Science Standards
   now under development. Don Duggan-Haas served as a

member of the five-person Earth & Space Science Design Team for the National Research Council-led initiative to develop Conceptual Frameworks for the next generation of science education standards. The Conceptual Frameworks are scheduled for release in spring 2011 and Achieve, Inc. will use them as the backbone to replace the 1996 National Science Education Standards. Dr. Duggan-Haas is also an active member of the Climate Literacy Network, the group responsible for the Climate Literacy Principles. These principles are now cited in several federal educational initiatives and requests for proposals in an array of grant programs.

### PRI and CNC reached thousands of individuals last year through participation in fairs and festivals. Among the many events we attended, two stand out:

For the fourth year in a row, we partnered with Cornell Cooperative Extension at the Great New York State Fair – 12 straight days (late August and early September) with a booth and large shale pit outside the 4-H Building at the State Fairgrounds in Syracuse. Over the course of the Fair we interacted with an estimated 4,163 visitors!

In October 2010, we talked with over 5,000 individuals in just two days on the National Mall in Washington, D.C., to which we carted large amounts of fossil-rich shale as a partner to the National Science and Engineering Festival.

14 EDUCATION GRANTS

FY2011 funding for education and exhibits allowed us to reach audiences in Tompkins County and across the country. Funding was received from both local and federal sources.

National Science Foundation Geosciences Division (FY2007): Expansion of hands-on inquiry-based interactive labs in Museum of the Earth. GEO 608062, Oct 1, 2006 – Sep 30, 2010, \$141,903 (PI: R. Ross, co-PIs: M.A. Sax, S.E. Humbert)

National Science Foundation Discovery Research K-12 (FY2008): Enhanced Earth system teaching through ReaL Earth Inquiry: NSF DRL733303, Aug 15, 2007 – Aug 14, 2012, \$1,763,588 (PI: Ross; co-PIs: D. Duggan- Haas, S.E. Humbert).

National Science Foundation Discovery Research K-12 (FY2008): Fossil Finders: Using Fossils to Teach about Evolution, Inquiry and Nature of Science: NSF DRL 733223, Jan 1, 2008 – Dec 31, 2012, \$1,491,746, \$266,951 to PRI. (PI: B. Crawford, Education | Grants Cornell Dept of Education; co-PIs: R. Ross, W. Allmon)

National Science Foundation (FY2008) AToL: Phylogeny on the Half-shell – Assembling the Bivalve Tree of Life, NSF DEB 732860, Sep 15, 2007 – Aug 31,

2012, \$499,990 (PI: Paula Mikkelsen; co-PIs R. Ross, S.J. Chicone)

**Earth System Science Education Alliance** (pass-through for **NASA** and **NSF Geoscience Education** (FY2008) Global Climate Change and Informal Earth System Science [online professional development for informal educators], June 1, 2008 – May 31, 2012, \$39,945 (PI: Carlyn Buckler: co-PI; R. Ross, Rusanne Low of GLOBE).

**National Science Foundation** (FY2009) Traveling exhibit and teacher professional development on evolution of maize, associated with maize genetics research. (DBI 0820619, March 1, 2009 – February 28, 2013, \$110,000 (PI: Ed Buckler of Cornell Univ.)

National Science Foundation Geosciences Division (FY2009): Tracking Climate in Your Backyard: Climate education for 4-H educators & youth, GEO 808122, Sep 15, 2008 – Sep 14, 2012, \$148,455 (PI: R. Ross, co-PI: S. Sands, A. DeGaetano, B. Schirmer)

National Science Foundation Geoscience Division (FY2010): Planning for a charter school-university-museum partnership to enhance diversity in the geosciences: NSF GEO 0939765, October 1, 2009 – September 31, 2012, \$39,055 (PI: R.Ross; co-PIs: R. Kissel, D. Duggan- Haas)

National Science Foundation Geoscience Division (FY2010): Geoscience education for communities impacted by gas drilling in the Marcellus Shale: NSF GEO 1016359, April 15, 2010 – March 31, 2012, \$97.127 (PI: R. Ross; co-PIs: T. Smrecak, T. Jordan, L. Brown)

National Science Foundation Informal Science Education (FY2010): My Climate, My Community: Sustainable Climate Change Exhibits for Rural Audiences: NSF ISE 0917581, September 1, 2009 – August 31, 2012, \$74,346 (PI: S. Chicone; co-PIs: R. Ross, T. Smrecak, S. Sands)

National Science Foundation Earth Science Instrumentation and Facilities (FY2010): Acquisition of a New Generation Benchtop SEM for Earth Systems Research, K-16 Education, and Public Outreach. NSF EAR 0930032, September 1, 2009 – August 31, 2012, \$110,000 (PI: R. Ross; co-PIs: W. Allmon, P. Mikkelsen, G. Dietl)

Cornell Cooperative Extension Smith-Lever (FY2010): Understanding the environmental, social, and economic impacts of gas exploration and drilling in the Marcellus Shale: NYC-124481, October 1, 2009 – September 30, 2012, \$69,000 (PI: W. Allmon; co-PI: R. Stedman, R. Ross, S. Riha)

**Park Foundation** (FY2010): My Climate, My Community: Exhibits and public forums on climate change for rural Tompkins County. July 1, 2009 – June 30, 2012, \$36,000 (PI: S. Chicone, co-PIs: R. Ross, T. Smrecak)

National Science Foundation Geosciences Division (FY2011): Educator Professional Development on Energy and Environment: A Case Example Focusing on Marcellus Shale Natural Gas Drilling. NSF GEO 1035078, September 15, 2010 – August 31, 2012, \$149,237 (PI: R. Ross; co-PIs: D. Duggan-Haas, T. Smrecak, C. Buckler)

National Science Foundation Atmospheric and Geospace Sciences Division (FY2011): Improved Regional and Decadal Predictions of the Carbon Cycle. NSF GEO 1049033, April 1, 2011 – March 31, 2015, \$1,064,067; \$60,736 to PRI (PI: N. Mahowald; co-PIs: P. Hess, R. Ross, C. Shoemaker)

PRI was awarded over \$750,000 in education and exhibit grants

# PRI published 5 papers on scientific aspects of Marcellus shale geology

The Marcellus Shale, which underlies parts of New York, Pennsylvania, Ohio, and West Virginia, is the largest shale gas basin in the US. Extraction efforts are already underway in Pennsylvania and West Virginia, and, given policy developments in New York, drilling is expected to start here in 2012. The environmental issues surrounding natural gas extraction have generated enormous interest locally, which we have been able to tap into thanks to an NSF grant and our collaboration with Cornell Cooperative Extension to provide outreach and be an unbiased source of scientific information about Marcellus Shale drilling.

**PRI published 5 papers** on aspects of Marcellus geology, with more expected in late 2011.

**PRI** hosted **7** webinars on environmental, economic, and community impacts of drilling, two of which featured PRI staff as the speakers.

**PRI helped CCE to offer CCE inservices** and workshops, community task force meetings, and public presentations on drilling.

**PRI** publishes a blog on our Marcellus project, at sciencebeneaththesurface.wordpress.com, and we also feature science journalism pieces on the Marcellus Shale from outside writers in our Notes from the Marcellus series.





Rosie, an eight-year old, was able to watch a graduate student in the Museum's Preparation Laboratory extract the fossil of a Late Jurassic dinosaur from the enclosing rock, something she'd seen before only in pictures in books. Not only was she able to watch, but she was able to talk with the student and ask questions about the fossil and what the student was doing This was her first time talking to an actual scientist and the experience may have lit a spark for her to pursue science in the future.

Educational programs for school groups, community groups, and the general public at the Museum of the Earth help the public learn that science is accessible, that they can be trusted to handle authentic specimens, and that they are free and welcome to ask and answer questions.

We reached over 30,000 people last year including 3,278 school children that participated in 116 education programs. Additionally, staff and volunteer docents led 91 tours of the Museum.

#### Kids Discover The Trail Program

Every first grader in the Ithaca City and Trumansburg School Districts visits the Museum through the Kids Discover the Trail Program; a collaboration between Ithaca's Discovery Trail and the Ithaca Public Education Initiative. Last year, 474 students and 140 chaperons participated with 578 "contact" hours between educator and pupil.

#### Permanent Exhibitions

Several new permanent exhibit upgrades were made in FY11. We installed a model of Tiktaalik (a vertebrate transitional between lobe-finned fish and amphibians) in our *Life onto Land* exhibit. We mounted a very large set of arthropod trackways on a block of Cambrian sandstone from Wisconsin. And, from recently acquired collection of William Zinsmeister of Antarctic marine fossils, we put on diplay the world's largest heteromorph ammonite.

### **Temporary Exhibitions**

One Fish, Two Fish, Old Fish, New Fish: Exploring the Evolution of Biodiversity

(March 5 – September 6, 2010)

Visitors leaned about species and what role they play, how they arise and decline, and more. This exhibit included live animals and a children's adventure backpack activity.

Science on the Half Shell: How and Why We Study Evolution (September 24 – February 28, 2011)

This well received NSF-funded exhibition, introduced visitors to the principles of evolutionary biology by showing them how an international team of scientists in an actual ongoing project conduct research in the field and in the laboratory. This exhibit is now part of our Traveling Exhibits program.

Maize: Mysteries of an Ancient Grain
(March 12 May 22 2011

(March 13 – May 23, 2011)

Visitors were able to explore the science behind maize and why it has been one of the most significant crops to humankind. Supplemental books on maize and children's' learning activities are included. This was co-created by PRI and scientists at the USDA maize genetics lab at Cornell and was funded by NSF. This exhibit is also part of our traveling exhibits program.

Cruisin' the Fossil Freeway with Artist Ray Troll and Paleontologist Kirk Johnson

17

(June 4 – September 5, 2011)

This exhibit from the Burke Museum of Natural History and Culture was a delightful blend of art and science. The exhibit was based upon 4000 miles of road trips made by Troll and Johnson to discover stories of fossils in the American West.

Enduring Shells: Bivalves and Other Mollusks by artist Marla Coppolino (September 18 – January 17, 2011)

Derived from her studies of Italian Old Masters, these drawings were rendered in sanguine on hand-prepared papers coated with calcium carbonate and tint, in tradition with studies made by Renaissance artists.

#### **Traveling Exhibitions**

We made extensive progress on launching our traveling exhibits program this year. *Science on the Half Shell* has been booked for two venues in FY12 and *Maize: Mysteries of an Ancient Grain* traveled on to the University of Iowa for display in the latter half of 2011; a number of other institutions have shown interest in booking it.

3,278 school children participated in 116 education programs

Why Would a "Fossil Museum" Want to Merge with a Nature Center? This is the question community members have been asking since January 2011; when the Boards of PRI and the Cayuga Nature Center voted unanimously to fully merge the two organizations. Although the community's feedback has been overwhelmingly positive, many have noted that the merger appears at first glance to be an unlikely alliance.

At their January meetings, the Boards reflected on how scientists study the Earth and its life, and the most effective ways to teach about their studies. They discussed Earth System Science—a way we can study the Earth by viewing evolution, climate change, geology, and paleontology as parts of one system. They concluded that this alliance is beneficial because paleontology is an essential part of what nature centers do, and Earth System Science is essential to paleontology.

#### **CNC:** An Asset to the Community

There is no mystery to why the community views CNC as a local treasure. It is located on 120 acres of land overlooking Cayuga Lake with a gorge, miles of trails, a six-story tree house ("Treetops"), seasonal butterfly garden, and other attractions. CNC also owns Smith Woods, a 30-acre parcel of "old growth" forest located nearby. Most of its existing programs focus around Earth System Science education.

existing teacher development programs in geology and paleontology by adding environmental science. PRI's Teacher-Friendly Guide project focuses on real-world, regional and local application of Earth science with an emphasis on fieldwork. CNC is an ideal location for this sort of place-based approach.

### PRI and CNC: Enhancing Current Programming

Because paleontology, nature centers, and Earth System Science are intimately linked, CNC offers us exciting ways to expand current programming and educational outreach. For example, an educational program in geology could be held at CNC's gorge. Access to CNC's "outdoor classroom" will improve our climate and biodiversity programs. Our evolution programs will be enhanced with access to CNC's live animals as well as its taxidermy and osteology collections. The live animals are already frequent – and very popular – additions to various public programs at the Museum of the Earth. We will expand our

#### **PRI and CNC: Future Possibilities**

The alliance holds great potential for new programs as well. For example, CNC is ideal for exploring the local impacts of climate change through the study of the potential regional decline (and even extinction) of sugar maple trees, the monitoring of invasive species, and measuring weather and weather-related conditions. New programs on evolution would apply evolutionary biology to natural phenomenon in the community. The availability of Smith Woods offers an excellent opportunity for programming around the history of forests in the Northeast, starting with the last retreat of the glaciers and continuing through the arrival of Native Americans and then Europeans.

# Over 800 campers enjoyed a fun and educational nature experience

#### Staff

Jessica Bennett, Office Manager
Russ Friedell, Camp Director
Cindy Rice, Manager of Outdoor Education
Matt Sacco, Manager of TEAM Challenge
Emily McKittrick, Manager of Animal Collections
Kevin Lanigan, Caretaker
Stephen Minarski, Caretaker
Christine Whitaker, Director of Nature Center Programs





### We are pleased to announce that our affiliation agreement with Cornell University that expired at the end of 2009, was formally renewed for another five years.

#### Teaching, Learning, and Research

Cornell graduate and undergraduate students are a key element in both the scientific life of PRI and our relationship with the University. Four of our PhD staff scientists are also Cornell faculty. Our collections are used regularly by Cornell faculty, staff, and students. Our staff and facilities constitute the majority of Cornell's non-botanical paleontology program. This year:

- Dr. Allmon taught the equivalent of 1.5 undergraduate courses and advised several graduate students. He supervised his first Cornell senior thesis by biology major Lauren Maistros. His sixth PhD student, Ursula Smith '10 received the EAS Department's Estwing Award for the year's most outstanding graduate student. He supervised Elizabeth Petsios' geology thesis and currently supervises Mary Kosloski '12, the 2010 EAS Department's award winner for most outstanding graduate teaching assistant.
- Dr. Dietl teaches a seminar course to advanced undergraduates each spring. He supervised his first senior thesis by Carlie Pietsch (who went on to paleontology graduate school at USC).
- Dr. Ross teaches an EAS summer course called "Earth in the News" and is a member of the Graduate Field of Education. He sit on the thesis committee of education PhD student, Dan Capps with Dr. Allmon.
- Dr. Mikkelsen gives guest lectures, most notably Invertebrate Zoology taught each summer at Cornell'sShoals Marine Lab in Maine. PRI Research Associate Hadlock Seeley is a faculty member at the Lab.
- Dr. Kissel continues to teach the 1-credit Fossil Preparation class for students associated with Professor John Cisne's Dinosaur class.

#### **Museum Exhibition Resource**

An increasingly significant area of interaction is the development of temporary exhibits in the Museum based on Cornell-conducted research.

- In 2010, we featured an exhibit on speciation based on Cornell evolutionary biologist Richard Harrison's work. The exhibit, *One Fish, Two Fish, Old Fish, New Fish* educated the public on how new species arise.
- In March 2011, Maize: Mysteries of an Ancient Grain opened. This
  exhibit on corn evolution was developed in cooperation with Cornell
  geneticist Ed Buckler
- The next project in the works is on the carbon cycle and global climate change based on Cornell EAS professor Natalie Mahawold's research. All of these exhibitions were made possible through faculty's NSF-funded research grants under the public outreach component.

#### **Public Outreach Projects**

PRI serves as the informal "outreach arm" of Cornell's EAS department. In this role we have partnered on many exciting outreach projects:

- We manage fossil exhibits in Snee Hall on campus, design and staff
  the department's tables at annual campus events for alumni and
  incoming freshmen, and serve as "Cornell experts" to the media on
  relevant topics, from the Gulf oil spill and Marcellus Shale to
  dinosaurs and evolution.
- Each year since 2006, PRI has organized Ithaca's Darwin Days celebration, most of which happens on Cornell's campus. In February 2011, approximately 700 people – many from Cornell – participated in the events.
- We partnered with Cornell's Department of Astronomy for our Museum in the Dark Halloween event
- We partnered with Cornell Cooperative Extension at the New York State Fair.
- Our national Fossil Finders project with Cornell Associate Professor of Education Barbara Crawford cultivates teacher professional development and 5th to 9th grade curricula using fossils.

#### **Park Fellows**

Both PRI and CNC work regularly with the Roy H. Park Leadership Fellows Program. This year they created an opinion survey to measure the public's insight into merger related programming and marketing.

#### **Marcellus Shale Outreach**

PRI first became involved in Marcellus Shale outreach in November 2008 through a partnership with Cornell Cooperative Extension's Marcellus Shale team. Over the past year, in conjunction with CCE, we have hosted six more webinars by Cornell University researchers.

#### The Dutro Fund

When long-time PRI Trustee Tom Dutro passed away in 2010, a memorial fund was established at PRI, and has received almost \$20,000 in donations to date. At the request of his family, we are using these gifts as the nucleus of the J. Thomas Dutro Memorial Student Research Fund to support research conducted by Cornell graduate and undergraduate students who use our collections.



We deeply appreciate the generosity of all our donors who made contributions to PRI and its Museum of the Earth during the past fiscal year, July 1, 2010, to June 30, 2011. PRI is a national leader in Earth science education largely because of a community that generously supports our mission. These gifts and grants provided vitally important general operating funds as well as specific contributions to programs, research, publications, collections, and exhibits.

**Giving Societies** We are grateful to the following donors, who each made an unrestricted contribution of \$1,000 or more to the Annual Fund.

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#### **BEHIND THE SCENES Donor Appreciation Event**

In March, we invited giving society members to a private, behind-the-scenes tour of the collections as a way to thank them for supporting PRI. Guests enjoyed good food and drink and the opportunity to see some spectacular specimens not on view to the public and to chat informally with PRI scientists.

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#### **WHY I SUPPORT PRI**

"While leading a weekly museum tour, I have repeatedly noticed that people relate to the Barbara Page tiles in a special way. Visitors who might just walk past the tiles on route to the displays get a special perspective on earth history when the tiles are explained. Extinction events/tiles generate much of the interaction. Most of the tiles have been adopted, but I noticed the five extinction events on nine tiles had not been adopted. I suspect that was because they were plain black or brown rather than a beautiful fossil. The drabness belies impact, and impact guides my adoption."

#### **DONALD WILSON**

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#### 2011 Mastodons in May Gala

The Gala was made possible by the generous support of:

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#### **Mastodons in May**

This year's gala was our most successful gala in four years. Ingrid Zabel, Development Associate, comments, "The gala was a great success, both financially and in terms of our guests' enjoyment. We exceeded our financial goal of raising \$25,000 in unrestricted funds, and in addition we obtained donations of \$6,100 towards purchase of items needed for our research labs."

Some of the items purchased for our research labs include a boom stereo microscope, microscope camera, signage, and visitor and staff chairs for PrepLab and chairs for our scientists and students in the BioLab.

The gala also featured a new type of auction, called a naming auction. Attendees could give money to buy a microscope for PRI or bring a group of school children to the museum, and their names would be acknowledged as sponsors. Zabel says, "Guests have given overwhelmingly positive feedback on the event as a whole, and particularly on the fun and excitement of the live auction. One guest wrote 'the auctioning of naming opportunities was awesome. I have never seen this before and found that to be quite innovative and seemed very successful.'"





#### The Dutro Fund

The following provided seed funding towards The Dutro Fund in honor of Trustee Emeritus Dr. J. Thomas Dutro, Jr.

Anonymous Michele & Mark Aldrich John Allen & Ann Callaghan Warren Allmon & Jennifer Tegan David Applegate Judy Back Arthur Boucot Nancy Dutro Lucy Edwards Rodney Feldmann & Carrie Schweitzer Dr & Mrs F. D. Holland Hospital for Special Care Aquatic Center Charyl K. Ito Linda Ivany & Bruce Wilkinson Fred Lepple Mr. & Mrs. George Pagliaro John Pojeta Jr. Rock Creek Golf Club Judith Smith Constance Soja John C. Steinmetz David Stewart David & Marisue Taube John Waters Frank Whitmore Abby Yochelson

#### **Membership**

Over 800 members belong to PRI and its Museum of the Earth. Every member is vitally important; to see a list of everyone who supported us this fiscal year, go to the complete Annual Report, posted online at www.museumoftheearth.org/annualreport

#### **Donations to Collections**

The following individuals donated specimens to the PRI collections:

Warren Allmon Loren Babcock Gregory Dietl Stanley Griffin Pierre Groulx Austin Hendy Linda Ivany Bill Klose Bradley Mitchell Judith Nagel-Myers Ted Novak Robert Ross Gene Ulmer Kristen Wycoff Adopt-a-Bone
Esther S. Bondareff
Peter Goodstein
Richard Shaff IHO
Linda Shaff
Catherine &
Michael Whalen
IHO
Marcus Whalen

Adopt-a-Tile Bruce J. Cochrane & Alice Kahn

Estate Gifts Anne Schaff

#### **Volunteers**

PRI would not be the success it is today without the continued support of many dedicated volunteers. In 2011, we had 169 volunteers donate 8,078 hours. We focus on communication and add value to each volunteer's experience by offering a wide variety of opportunities, freedom to pursue individual projects, and chances to learn.

After a yearlong hiatus, our History of Life volunteer and community training course returned to a record crowd. In March, we collaborated with the United Way and RSVP to host a local volunteer coordinators meeting. Thank you to:



Michael Durfee Lenore Durkee Vern Durkee Robin Elliott Amy Erickson Kayla Erickson Tish Evans Eniko Farkas Faheem Fazili Robyn Fink Sarah Ford Jeremy Gardner Adric Garlick Philip Garrett Walter Gates Bridget Goodwin Michael Grenier Maddie Halpert Dong Hao Emily Harper Ken Haulton Robin Henne Nick Hogancamp Larry Jensen Kelly Kennard Eric Keto Natalie King

Natalie Kirkwyland Bill Klose Laura Komar Jasmine Kosonen Frank Kozlowski Rachel Kulick Brian Lee James Leet Samantha Lesser Stephanie Liff Curt Lindy Bo Lipari Susanne Lipari Mike Marano Kelly Martin Phyllis McNeill Rebecca Mendez Joshua Mervis Jed Michael Sam Moody Frank Moore Esther Mukuudane Kristin Nilsen-Rice Mark Oros Sasha Paris Erika Pascacio Rebecca Payne

Eric Poole Andres Ramirez Emily Reimann Cecilia Roche Ted Rohm Sarah Rosemarino Miriam Rothenberg Kelly Rowland Alla Sahakyah Erica St. Denis Adam Stewart Sharinne Sukhnanaud Sarah Sullivan Bo Sun Molly Sutton Adam Tagliamonte Emily Tompkins Emily Van den Blink Sally Vann Alex Wall Lane Wallet Lily Weiner Anita Welych

Martin Welych-Flanagan Cathy Whalen Doris White



Charlie White Nick Wilken Don Wilson Margaret Windsor Katie Woods Matt Wysocki Christine Xu Xiaohua Yang Ingrid Zabel

Broome Volunteers, Alpha Pi Omega, Into the Streets Volunteers, Cornell Astronomy, Little Tree Orchards, Ithaca College's Bio Anthro Class, and Cornell Humphries Students also volunteered.

#### **STATEMENT OF ACTIVITIES**

For the Years Ended June 30,

UNRESTRICTED NET ASSETS	2011	2010
	2011	2010
REVENUE, GAINS AND OTHER SUPPORT: Grants, contributions, and gifts	¢657.245	¢269.466
Programs	\$657,245 23,003	\$368,466 25,752
Publications	51,750	66,074
Dues and memberships	31,189	31,225
Museum admissions	90,507	93,785
Specimen casts	-	27,423
Merchandise sales, net cost of good sold		27,120
on \$28,736 and \$30,196, respectively	36,238	40,480
Investment income	1,149	2,791
Gain on investments	19,644	14,688
Gifts in kind	103,716	83,255
Other	55,562	54,551
Total	1,070,003	808,490
NET ASSETS RELEASED FROM RESTRICTIONS		
Grants	1,320,834	1,324,034
Specific uses	70,493	74,093
Total	830,283	1,398,127
TOTAL REVENUE, GAINS AND OTHER SUPPORT	2,461,330	2,461,330
EXPENSES AND LOSSES		
Payroll and related benefits	1,244,066	2,206,617
Depreciation and amortization	419,302	1,198,322
Interest expense Professional fees	171,967	378,310
Other	70,422 105,701	174,872 36,129
Building and maintenance	146,205	102,372
Grant subcontracts	394,811	183,209
Publications and printing	43,106	240,198
Exhibit expense	15,182	20,019
Supplies	14,959	17,408
Travel and workshops	8,411	14,093
Postage	16,035	13,378
TOTAL EXPENSES AND LOSSES	2,650,167	2,414,552
CHANGE IN UNRESTRICTED NET ASSETS	(188,837)	(207,935)
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TEMPORARILY RESTRICTED NET ASSETS		
Grants, contributions, and gifts	782,916	2,330,534
NET ASSETS RELEASED FROM RESTRICTIONS		
Grants, contributions, and gifts	(1,391,327)	(1,391,327)
CHANGE IN TEMPORARILY		
RESTRICTED NET ASSETS	(608,411)	932,407
	(***,)	,,,,,,,
CHANGE IN NET ASSETS	(797,248)	724,472
<b>NET ASSETS,</b> beginning of year	6,066,028	5,341,556
NET ASSETS, end of year	5,268,780	6,066,028
(to see accompanying notes, please contact the Finance Department)		
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# PRI and its Museum of the Earth can be found online at: museumoftheearth.org

565,511 Pageviews 96,726 Unique visitors

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