



**PALEONTOLOGICAL  
RESEARCH INSTITUTION**



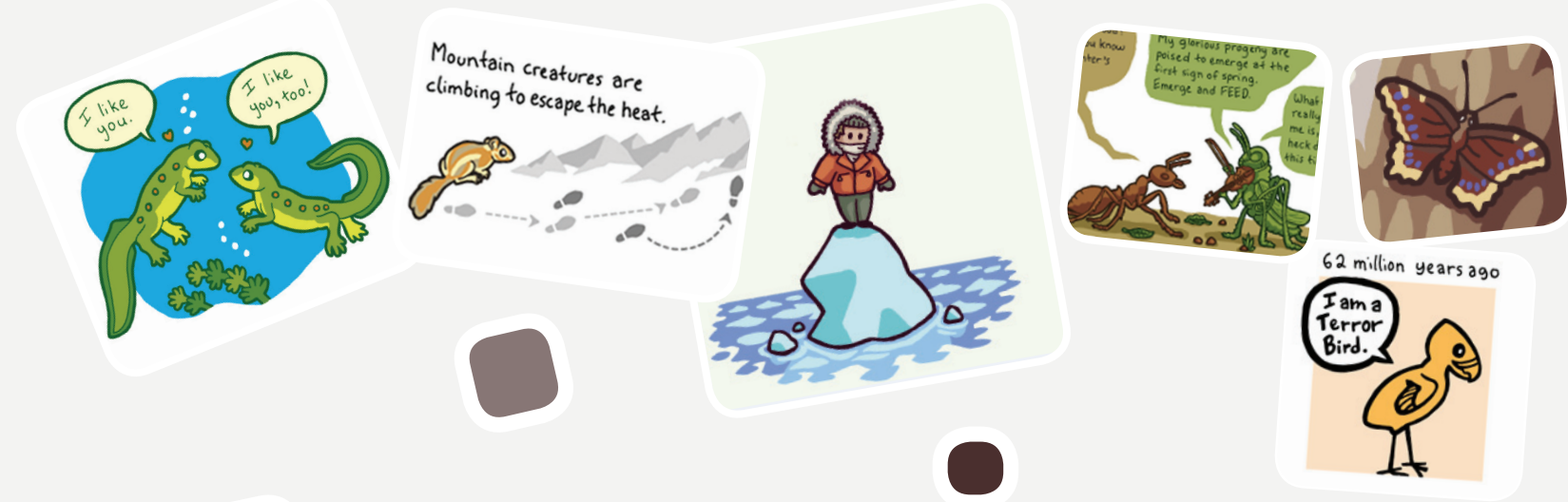
YouTube



[priweb.org](http://priweb.org)

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# Paleontological Research Institution Annual Report 2015

Affiliated with  Cornell University

# PRI: What and Where We Are

# Contents

Founded in 1932, the Paleontological Research Institution pursues and integrates education and research, and interprets the history and systems of the Earth and its life, to increase knowledge, educate society, and encourage wise stewardship of the Earth. PRI has outstanding programs in research, education, collections, publications, and public outreach.



**Smith Woods:** Located in Trumansburg, NY, Smith Woods is the largest plot of old growth forest in central New York, and has 32 acres of natural scenery and trails, including trees dating back as far as the early 1700s.



**Cayuga Nature Center:** Housed in a historic 1939 building, the Nature Center focuses on the natural history and ecology of the Cayuga Lake basin, by providing indoor and outdoor opportunities for environmental education, utilizing trails, gardens, exhibits, and a live animal collection.



**Palmer Hall:** Named to honor Katherine Palmer (Director, 1952-1978), Palmer Hall is home to PRI's collections, staff offices, laboratories, and library.



**Museum of the Earth:** Opened in 2003, the Museum is home to temporary and permanent exhibits teaching visitors about the history of life on Earth. It is also a popular tourist attraction that hosts a variety of programs, including special events, field trips, and group tours.

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Comic components in this annual report are by Rosemary Mosco (see p. 33).





# From the President



Dear friends of PRI,

It's PRI.

PRI is the umbrella term that covers the Paleontological Research Institution and its two public venues, the Museum of the Earth and the Cayuga Nature Center. Within those three divisions, we explore the history of life on Earth, from the Precambrian Era to the environmental challenges of today.

Current events teach us that we can't assess what we are now seeing, via climate change, endangered species and clean water shortages, without a broad perspective. It is a perspective that we can attain by study of the geological record as well as the natural environment, and science from PRI has been formative in the critically important field of Conservation Paleobiology.

Visitors to the Museum and the Nature Center absorb and spread the message, but we have far to go in educating the general public in the areas of evolution, climate change, and Earth Science. This year, PRI's landmark publications-*The Teacher Friendly Guides*™ to Earth Science-have been enthusiastically adopted by educators, and add to our reputation as a nationally recognized name in Earth Science education.

PRI activities in the past year have been centered on both the spectacular and the sustainable. The Smithsonian *Stegosaurus* model has been a spectacular addition, joining the Mastodon and the Right Whale as signature exhibits in the Museum of the Earth. The changes to the Cayuga Nature Center have been nothing short of spectacular, continuing the transformation of that venerable site into a stellar venue for environmental education. PRI is also on track to financial sustainability, with a highly successful capital fund drive followed by success in major donations. We continue to find success too, as we navigate the intricate world of government grants. Our mortgage debt is being eliminated and revenues are up from museum visits, camps, and publications. We are convinced that PRI will serve the vital cause of Earth Science and environmental education and research for generations to come.

A handwritten signature in black ink that reads "Jim Fogel".

Jim Fogel M.D.  
President, Board of Trustees

# From the Director



To our PRI Community,

PRI continues to be a remarkable place-where amazingly talented people regularly do a huge amount with very limited resources; where a national treasure of a collection is cared for better and used far more than many others that are far better supported financially; where a significant asset of a great research university is husbanded and grown on a financial shoestring; where important education, scholarship, and public service are produced every day with fiscal constraints that most of our peers would find prohibitive.

The past year again provided numerous examples of this "gold-from-straw" theme, across the Institution. The Museum 10th Anniversary ("Rock the Future") Campaign closed at the end of June '14, having raised just under \$1.2 million. These funds helped pay for, among other things, renovations at the Cayuga Nature Center's main lodge building, which were enthusiastically received by the public, led to an enormous increase in visitors, and announced to the community that a "new Nature Center" was here. The Smithsonian's National Museum of Natural History donated-as a permanent transfer-three tractor-trailer loads of spectacular paleoart exhibit elements from their National Fossil Halls, now under renovation. Starting with "Steggy", the life-size paper mache *Stegosaurus* made for the 1904 St. Louis World's Fair, these pieces will now form the basis for the next wave of improvements to the permanent exhibits of the Museum of the Earth. In Collections, we received major new NSF funding to continue our curation and digitization, in partnership with a group of other (much larger) institutions. Financially, a \$250,000 challenge incentivized other donors to help make this year one of our most successful years ever for major gifts.

In a time of great change, PRI continues its historical legacy as a place where paleontological science-meaning the history of the interconnectedness of the Earth and its life-is at the core of everything we do, and we now share this perspective with more people than ever before. If you are reading this now, you have some interest in this ambitious mission. We invite you to be an active part in it.

A handwritten signature in black ink that reads "Warren D. Allmon".

Warren D. Allmon  
Director





# Fiscal Year at a Glance

(July 1, 2014 - June 30, 2015)



Warren Allmon teaches *Evolution and Marine Diversity*, and Paula Mikkelsen teaches *Invertebrate Zoology* at Shoals Marine Laboratory in the Gulf of Maine.

Fox Trot Fall Festival and 5K Run.

PRI offers climate change education field trips to Ithaca's New Roots Charter School, supported by a Park Foundation grant.

Ace the Red-tailed Hawk arrives, our first raptor that can be used in public programs.

*Night at the Museum* celebrates Ice Age Life with an overnight program for children and their families.

33rd Annual Maple Festival.

Steggy arrives from the National Museum of Natural History.

Young Naturalist Access Program (YNAP) begins.

July

September

November

January

March

May

August

October

December

February

April

June

*Travel and Leisure Magazine* ranks Ithaca 3rd Quirkiest City, in part because of PRI's annual *Darwin Days* celebration.

8th Annual Summer Symposium.

Annual *Teacher Resource Day* attracts over 70 teachers from across New York State.

*Fossil Mania* event celebrates *National Earth Science Week*.

*Winter Solstice Celebration*.

Cornell EAS Assistant Professor Gang Chen donates *Weather in a Tank* demonstration equipment.

*Quirks of Nature: The Comics of Rosemary Mosco* temporary exhibit opens.

*Darwin Days*, themed *Evolution in Your Backyard*.

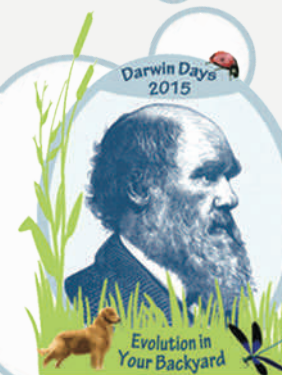
*Wild Weather Weekend* highlights science behind climate change.

Climate Change Education Manager Ingrid Zabel leads *Trees Awake!* Phenology Walk series.

*Ancient Microworlds* temporary exhibit opens.

Dr. Gordon Baird of SUNY Fredonia donates 300 boxes of NYS Devonian fossils.

SUMMER SYMPOSIUM



# Research

Scientific research is a key aspect of PRI's endeavors. Dedicated staff, affiliated students, and research associates provide unique insight and expertise in their fields that inform all of our other programs, and also contribute significantly to their respective fields of scholarship nationally and internationally. PRI's research facilities are frequently utilized by students and teachers from a variety of other institutions.

## Research Awards

Since 1993, PRI has presented four annual awards to individuals in recognition and encouragement of excellence in the discipline of paleontology.

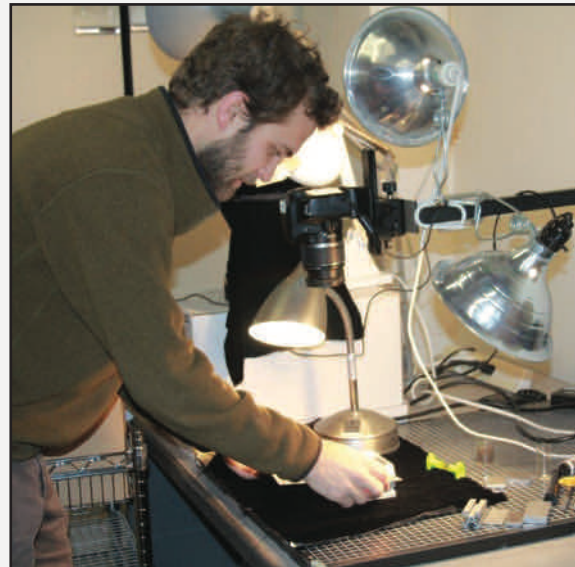
### Congratulations to this fiscal year's recipients:

**Gilbert Harris Award: Dr. Richard Squires**, Professor Emeritus at California State University-Northridge

**Katherine Palmer Award: Ray Troll**, Paleoartist, Ketchikan, AK

**J. Thomas Dutro Jr. Student Award: Joshua Slattery**, Ph.D. student at the University of South Florida

**John W. Wells Grants-in-Aid of Research Award: Stewart Edie**, Ph.D. student at the University of Chicago



Stewart Edie, John Wells grant winner, visiting Collections in December, 2014.

Detailed descriptions about individual Grants-in-Aid awards can be found on our website at [www.priweb.com/research](http://www.priweb.com/research).

## Learning from the past to understand the future...

In early 2015, PRI's Director of Collections and Curator of Cenozoic Invertebrates, Dr. Greg Dietl, published a paper with colleagues on conservation paleobiology, a still-new field that he has personally done much to develop over the past decade. The paper makes a strong case for the importance and relevance of the fossil record in issues related to conservation. It appeared in *Annual Reviews of Earth and Planetary Sciences*, a highly respected annual publication that invites comprehensive articles from leaders in the field. This paper will be seen by a large portion of the geoscience community and is expected to generate a lot of attention and citations.

In July 2014, PRI purchased a Gas Chromatography Amino Acid Racemization (GC AAR) system from the University of Delaware, making PRI one of only six facilities in the world with this capacity. GC AAR systems assist in dating specimens in a variety of disciplines. As part of the Bio Lab in Palmer Hall, this system will also enhance PRI's Conservation Paleobiology research program.

## PRI at GSA

In October 2014, six PRI staff members, three Cornell graduate students, and two Cornell undergraduates attended the Geological Society of America (GSA) meetings in Vancouver, British Columbia. Attended by more than 5,000 Earth scientists, GSA is considered the "main event" annually for paleontologists in North America. In addition to a PRI reception, GSA is the venue for presentation of our annual Gilbert Harris Award for excellence in systematic paleontology.

## Published Research Papers (July 2014 - June 2015)

Between July 1, 2014 and June 30, 2015, 12 peer-reviewed research papers were published by PRI staff, students, and research associates:

**Allmon, W. D.** 2015. Darwin and paleontology: a re-evaluation of his interpretation of the fossil record. *Historical Biology*, doi.org/10.1080/08912963.2015.1011397, 27 pp.

**Dietl, G. P., S. M. Kidwell, M. Brenner, D. A. Burney, K. W. Flessa, S. T. Jackson, and P. L. Koch.** 2015. Conservation paleobiology: leveraging knowledge of the past to inform conservation and restoration. *Annual Review of Earth and Planetary Sciences*, 43: 79-103.

**Duggan-Haas, D.** 2015. There's no such thing as a free megawatt: hydrofracking as a gateway drug to energy literacy. *Journal of Sustainability Education*, 8(1), [http://www.jsedimensions.org/wordpress/content/theres-no-such-thing-as-a-free-megawatt-hydrofracking-as-a-gateway-drug-to-energy-literacy\\_2015\\_01/](http://www.jsedimensions.org/wordpress/content/theres-no-such-thing-as-a-free-megawatt-hydrofracking-as-a-gateway-drug-to-energy-literacy_2015_01/).

**González, V. L., S. C. S. Andrade, R. Bieler, T. M. Collins, C. W. Dunn, P. M. Mikkelsen, J. D. Taylor, and G. Giribet.** 2015. A phylogenetic backbone for Bivalvia: an RNA-seq approach. *Proceedings of the Royal Society B*, 282: 20142332.

**Healy, J. M., P. M. Mikkelsen, & R. Bieler.** 2015. Sperm development in the anomalodesmatan bivalve *Myochama anomioides* (Mollusca: Myochamidae) – does the nucleus help position the 'temporary' acrosome? *Acta Zoologica*, 96(4): 487-496.

**Healy, J. M., P. M. Mikkelsen, & R. Bieler.** 2015. Sperm ultrastructure in honeycomb (foam) oysters (Bivalvia, Gryphaeidae, Pycnodontinae): comparison with other Ostreoidea and taxonomic implications. *Invertebrate Biology*, 134(2): 136-150, doi 10.1111/ivb.12086.

**Hendricks, J. R.** 2015. Glowing seashells: Diversity of fossilized coloration patterns on coral reef-associated cone snail (Gastropoda: Conidae) shells from the Neogene of the Dominican Republic. *PLoS ONE*, 10(4): e0120924. doi:10.1371/journal.pone.0120924.

**Saupe, E. E., J. R. Hendricks, R. W. Portell, H. J. Dowsett, A. Haywood, S. J. Hunter, and B. S. Lieberman.** 2014. Macroevolutionary consequences of profound climate change on niche evolution in marine mollusks over the past three million years. *Proceedings of the Royal Society B: Biological Sciences*, 281:20141995. (doi:10.1098/rspb.2014.1995)

**Paul, S. Herbert, G.S., and Dietl, G. P.** 2015. Predator-induced edge-drilling behavior of the lace murex *Chicoreus dilectus* (Mollusca: Gastropoda: Muricidae). *Journal of Molluscan Studies*. 81:233-237.

**Stafford, E.S., Dietl, G.P., Gingras, M.P. and L. R. Leighton.** 2015. *Caedichnus*, a new ichnogenus representing predatory attack on the gastropod shell aperture. *Ichnos*, 22: 87-102.

**Hattori, K. E., Kelley, P. H., Dietl, G. P., Moore, N. O., Simpson, S. L., Zappulla, A. M., Ottens, K. J., and Visaggi, C. C.** 2014. Validation of taxon-specific sampling by novice collectors for studying drilling predation in fossil bivalves. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 412: 199207.

**Simone, L. R. L., P. M. Mikkelsen, and R. Bieler.** 2015. Comparative anatomy of selected marine bivalves from the Florida Keys, with notes on Brazilian congeners (Mollusca: Bivalvia). *Malacologia*, 58: 1-127.





# Publications

## Bulletins of American Paleontology

One issue of *Bulletins of American Paleontology* (BAP) was published during the fiscal year, and six accepted manuscripts are currently in revision. BAP continues to have an excellent reputation among authors, libraries, subscription agents, and other sectors of the academic community. BAP currently has 167 subscribers, including 31 as electronic-only versions and 46 as exchanges.

The following manuscripts are currently under revision by their authors:

**Kauffman, Erle G.** "Paleontology and stratigraphy of the Huerfano Park area, south-central Colorado." BAP 389.

**Ward, Lauck W.** "A History of Paleontology in Virginia 1607-2007."

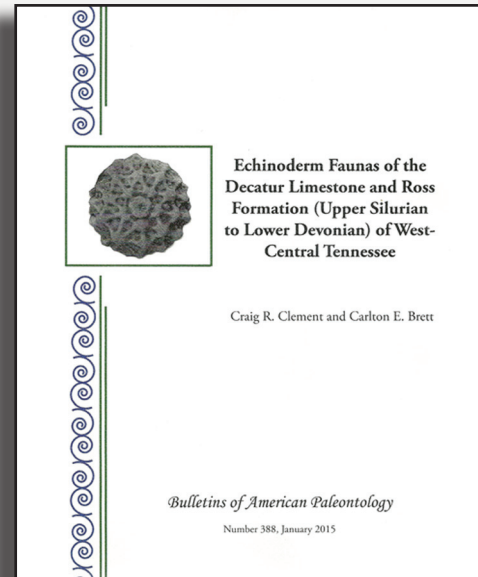
**BAP 390 Govoni, David L., Hansen, Thor A., Allmon, Warren D.**

"Archaeogastropod and Mesogastropod Mollusks from the Brightseat Formation (Paleocene: Danian) of Maryland." BAP 391.

**Frantescu, Adina.** "Comparative study of the Eocene fossil Decapod Crustaceans of the North American Atlantic Coast and European Tethyan provinces." BAP 392.

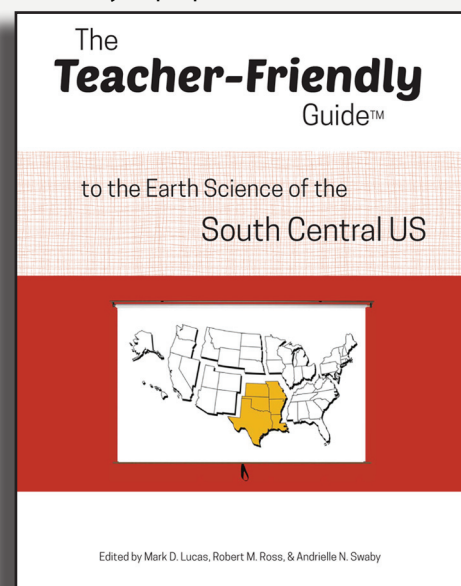
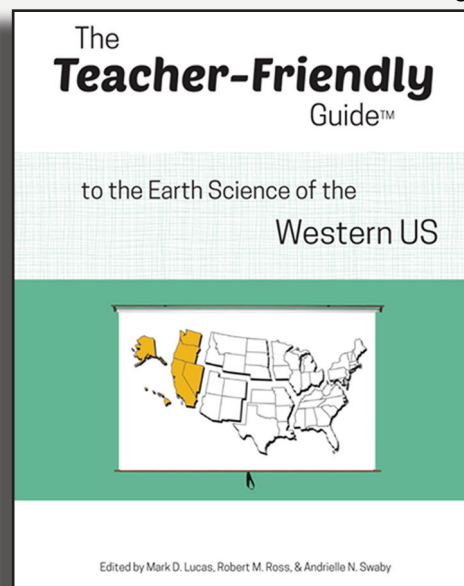
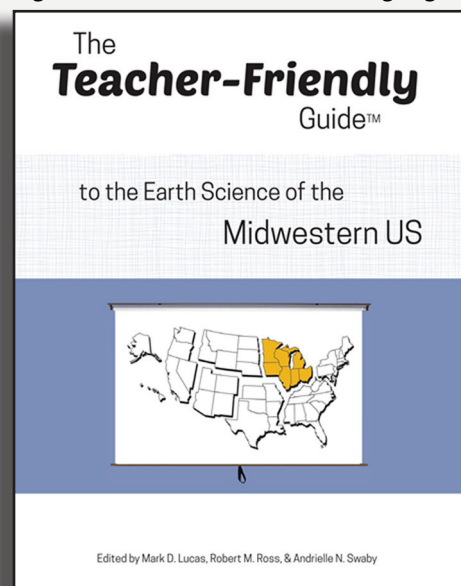
**MacGabhann, Brenandáán A., Murray, John.** "The Class Eldoniata (Cambrian-Devonian): the least-well-known major group of Paleozoic fossils." BAP 393.

**Landau, Bernard M., Marques de Silva, Carlos, Heitz, Antoine.** "Systematics of the Gastropods of the Late Early-Early Middle Miocene of Cantaure, Paraguaná Peninsula, Venezuela." BAP 394. In press.



## Teacher-Friendly Guide™ Series

PRI is proud to offer a growing series of *Teacher-Friendly Guides*™ (TFGs) to Earth Systems Science. Written for educators as content resources and curriculum supplements, TFGs are designed to provide educators with the background necessary to introduce scientific topics using familiar organisms and landscapes. During FY15, TFG Midwest, West, and South Central were completed, along with a second revised printing on the Midwest. The remaining regional volumes, as well as a TFG on climate change are currently in preparation.

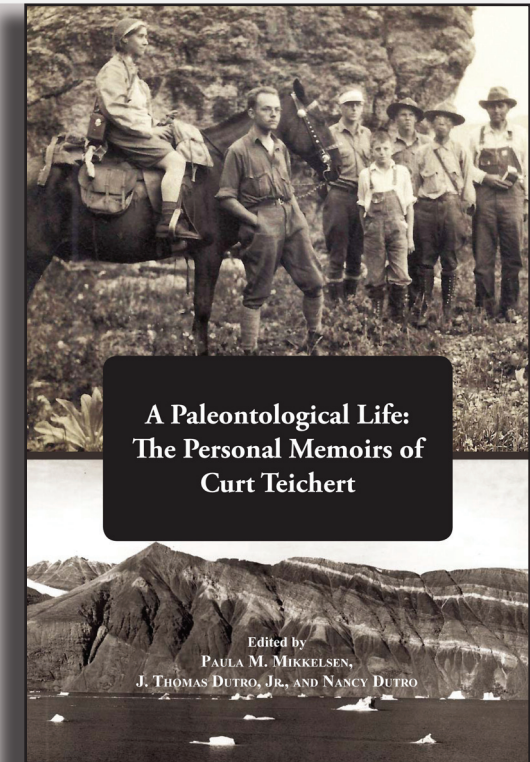


## Evolution: This View of Life (ETVoL)

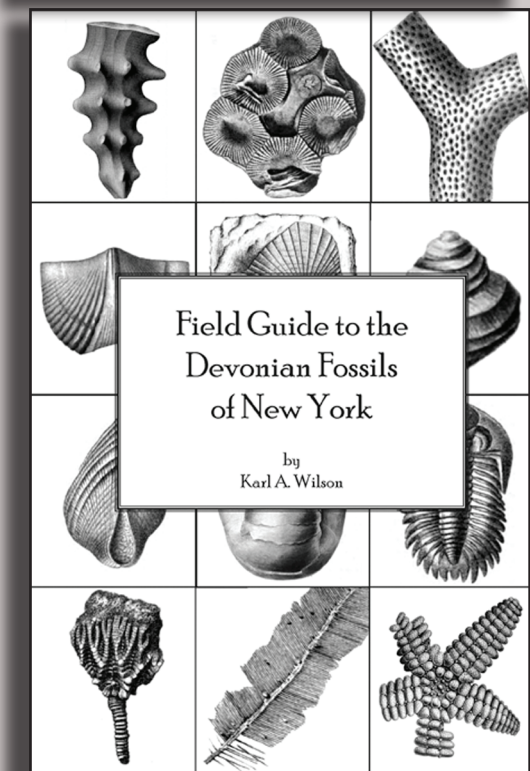
PRI continues to contribute to the Paleontology section of ETVoL, an online magazine produced by the Evolution Institute at SUNY Binghamton. Part-time assistants Laura Komer and Sasha Paris, along with the support of volunteer writers, have helped to contribute weekly postings and materials to ETVoL. Visit: <https://evolution-institute.org/this-view-of-life>.

## Special Publications

**A Paleontological Life: The Personal Memoirs of Curt Teichert**, edited by Paula M. Mikkelsen, J. Thomas Dutro Jr., and Nancy Dutro. These previously unpublished memoirs document Teichert's exciting life and his influence on 20th century Earth science. The memoir includes dramatic accounts of his long and fascinating career, spanning 60 years of adventure including Arctic fieldwork, an escape from Nazi Germany, working in the Australian outback, and cooperating with Iranian, Pakistani, and Afghan colleagues in the days before terrorism. Teichert was a world authority on fossil cephalopods, published on topics from Gondwanan geology to fossil reefs, described more than 280 new species, founded international paleontological societies, and contributed to the *Treatise on Invertebrate Paleontology*.



**Field Guide to the Devonian Fossils of New York**, by Karl A. Wilson. Karl is a retired biochemistry professor from Binghamton University, but is a life-long avocational paleontologist, well-versed in Devonian fossils. This volume, combining the best of modern paleontology with the classic illustrations of James Hall, John Clarke, Amadeus Grabau, and Winifred Goldring, replaces the long out-of-print *Devonian Paleontology of New York* by David Linsley (PRI, 1994). In all, 408 taxa are covered in the new volume, spanning the rich taxonomic breadth of New York's Devonian strata.



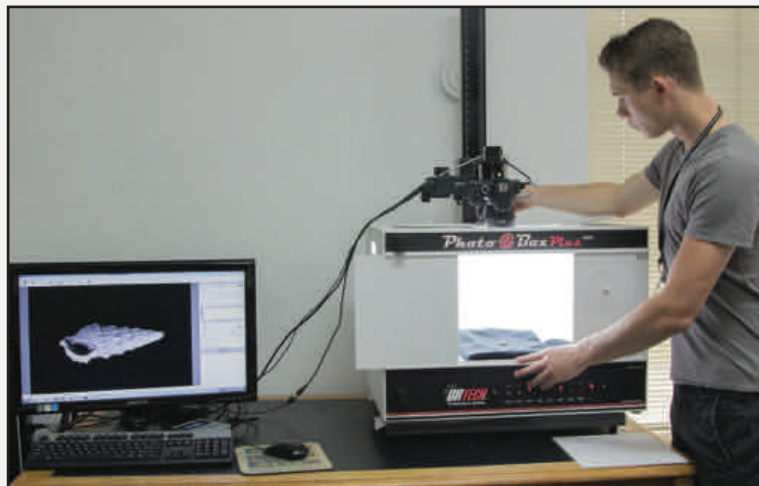


# Collections

With over 3 million specimens, PRI's collections rank among the 10 largest invertebrate paleontology collections in the United States. The Collections Department plays a key role in PRI's scientific research, teaching activities, and exhibition efforts, and serves as a resource for researchers across the country and the world.

## Digitization Efforts

A major focus of the Collection Department's efforts during fiscal year 2015 has been the digitization of specimens. The process of presenting collections data in a digital format is essential to PRI's future. Collection digitization will allow PRI to increase public access, enhance research efforts, and create new possibilities for outreach. As digitization becomes common practice in today's museum world, it is important for the future of PRI to meet this demand. Through digitization, our collections will be more accessible to users who may not be able to visit them in person, and also will allow PRI to preserve, archive, and organize specimens to meet new common standards.



Keith Borrino, an intern from RIT, uses new imaging equipment to photograph a recent specimen acquisition.

In 2015, PRI received a \$352,407 grant from the National Science Foundation (NSF) to digitize PRI's Cenozoic invertebrate collection from the Pacific coast of the Americas. This 4-year project will aim to complete the digitization of approximately 42,000 specimens, digital imaging of 12,500 specimens, and the georeferencing of 1,400 locations.

The project is in collaboration with several other institutions, including the University of California at Berkeley (as the lead institution), and University of Oregon, University of Alaska, California Academy of Sciences, Natural History Museum of Los Angeles County, and the Smithsonian National Museum of Natural History.

PRI's Collections Department has moved to a new relational database platform called Specify, which will be used as part of the upcoming NSF digitization project. PRI has acquired new state-of-the-art digital imaging equipment and software that will improve the quality of specimen photographs. These additions include a new camera stand with high-frequency lights, a 100mm macro camera lens, and the software programs Helicon Focus and Stack Shot.



A high-resolution "stacked" photograph of an *Ecphora* shell, taken by RIT intern Kieth Borrino, using PRI's new state-of-the-art digital imaging equipment.

## Collections Growth

The rate of collection growth is an important metric in collections management. Growth in PRI's Collections occurs through accessions (permanent additions), that can represent a single specimen or thousands of specimens. In FY15, there were 26 accessions. Two accessions in particular contributed significantly to the Collections Department's core strengths: Cenozoic mollusks of the western hemisphere and Paleozoic invertebrates from the northeastern US.

- **Accession 1677, Quaternary mollusk samples from mid-Atlantic beaches of the United States, donated by J. Wehmiller.**
- **Accession 1726, Stratigraphic samples from the Devonian of New York, donated by Dr. Gordon Baird:** PRI continues to receive many New York Devonian fossils from Dr. Gordon Baird of SUNY Fredonia, which have been acquired in batches over the past several years. In June 2015, another portion consisting of over 300 boxes of material from 300 localities was accepted.

## Specimen Donors

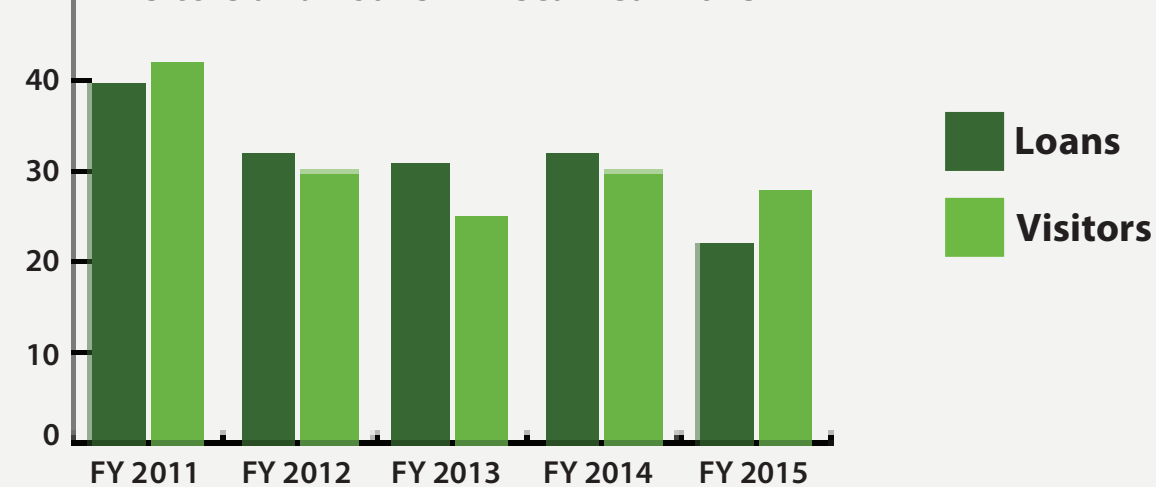
Along with activity from staff and affiliated students, private specimen donations also contribute to collection growth. We would like to thank the following individuals for their specimen donations this fiscal year:

- Dr. Gordon Baird
- The Estate of Mr. Robert J. Lambert, Jr.
- Dr. Howard Evans
- Mr. Larry Jensen
- Mr. Kevin Lowe
- Dr. John Wehmiller
- Mrs. Cathy Whalen



Mollusk samples from mid-Atlantic beaches of the US, donated by J. Wehmiller.

## Visitors and Loans in Fiscal Year 2015



PRI's Collections Department continues to maintain a high level of scientific loans and usage, commensurate with the size of our holdings. Most loan requests are for Cenozoic mollusks. Along with physical loans and visits, virtual use of Collections via our website is becoming more frequent.



# Education & Outreach

Through our two public educational venues in the Ithaca area, the Museum of the Earth and the Cayuga Nature Center, PRI offers numerous programs, informational materials, and learning opportunities in a wide variety of fields, including ecology, evolution, Earth science, and the study of climate and energy. Other PRI programs also reach students and teachers across the nation.

## Regional and National Leadership

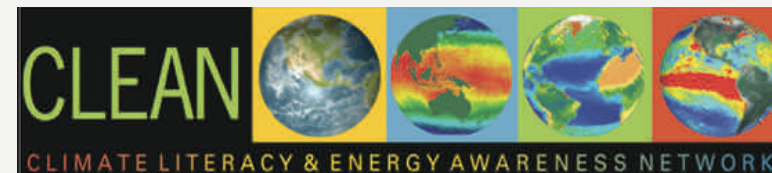
**Next Generation Science Standards Implementation:** PRI's Don Duggan-Haas has played an important role in the development of the Next Generation Science Standards (NGSS), formulated to replace the 1996 National Science Education Standards. In January 2015, New York State Board of Regents released the Statewide Strategic Plan for Pre K-12 Science, which outlined new standards that were heavily influenced by NGSS. Don was involved from start to finish as a member of the five-person Earth and Space Science Design Team that developed the NGSS, and is also a member of the Statewide Leadership Team for NGSS Development.



**Geological Society of America:** In 2014, Don Duggan-Haas completed his term on the Executive Board of the Geoscience Education Division of the Geological Society of America (GSA). He served as Division Chair in 2012-2013.



**Climate Literacy and Energy Awareness Network:** Ingrid Zabel and Don Duggan-Haas are active members of the Climate Literacy and Energy Awareness Network (CLEANet.org), a group responsible for the Climate Literacy Principles that have been cited in several national educational initiatives and proposal requests for a variety of grant programs. CLEANet recently published the National Climate Assessment (NCA), which contains a wealth of information and resources for teachers.



**Western New York Environmental Alliance (WNYEA):** Don Duggan-Haas is currently serving on WNYEA's Climate and Energy Working Group, as well as its Education Process Group. WNYEA is composed of more than 100 groups and institutions, including PRI, which discuss and work on environmental issues in Western New York.

**Western New York Science, Technology, Engineering and Mathematics Hub (WNY STEM):** Don Duggan-Haas also participates in the WNY STEM Hub, a new initiative to support the teaching of science, technology, engineering, and mathematics in Western New York. Don served as the keynote speaker at the STEM Hub's first exposition, co-sponsored by Erie 1 BOCES.



Don Duggan-Haas served as the keynote speaker at the WNY STEM Hub's first exposition.

## Earth System Education

**Real Earth Inquiry Project:** PRI's five-year \$1.8 million NSF-funded project was completed this summer. *Teacher Friendly Guides™* (TFGs) continued to be a major focus of this project (See p. 8).

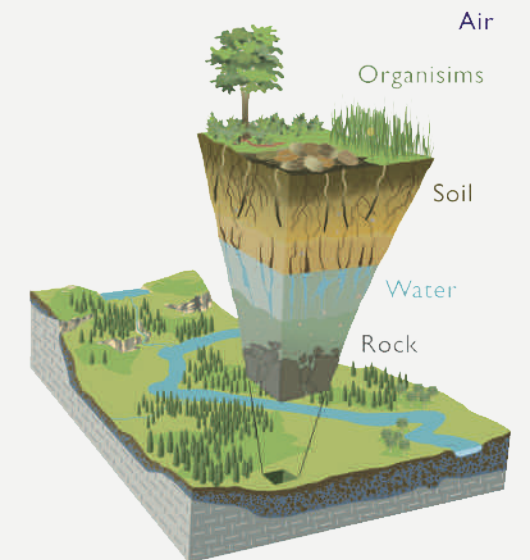
**Virtual Field Experiences (VFEs):** In conjunction with the Real Earth Inquiry project, PRI continues to be a national leader in the design and development of VFEs. Ten Real educators and one student presented their VFEs at GSA's annual meeting in Vancouver in the fall of 2014. The 2014 Science Teachers' Association of New York State meeting included two VFEs, and a poster was presented on extraterrestrial VFEs at the American Geophysical Union's fall meeting.



A sample image from a VFE featuring Beartooth Pass, WY.

**Critical Zone Observatory Network:** In the summer of 2014, the national office of the NSF-funded Critical Zone Observatory Network was established at Cornell University, with PRI as educational outreach partner.

**Public Field Trips:** Throughout the summer of 2014, PRI led off-site fossil field trips in Moravia and Schoharie, NY, and a two-day trip to see dinosaur footprints in Connecticut and Massachusetts. PRI also offers the James Potorti Interpretive Gorge Walks, free geological walks held every Friday morning in August, in memory of 9/11 victim and Ithaca native, James Potorti.



The Critical Zone: An environment where rock, soil, water, air, and living organisms interact and shape the Earth's surface.

© <http://criticalzone.org/national/about/media-kit-1national>



Fossil field trip participants sift through the shale in search of fossils.

## Evolution Education

**(February 8-14, 2015):** Darwin Days is an annual series of events designed to celebrate the birthday and legacy of Charles Darwin (1809-1882). The 2015 theme was "Evolution in Your Backyard," focusing on examples of evolution in the organisms around us. Activities and events included an exhibit at the Tompkins County Public Library, a screening of the feature film *Microcosmos* at Ithaca's Cinemapolis theater, a panel discussion at Cornell University, Darwin's Quirky Birthday Bash at the Museum of the Earth, and a Trivia Night at Felicia's Atomic Lounge.



# Education & Outreach

## School and Community Programs

**Caroline Elementary Wilderness Campus:** For the second year, the Nature Center has partnered with Caroline Elementary school, near Ithaca, to deliver hands-on learning experiences. From taxidermies to trail cameras, staff members **Matt Sacco** and **Dayna Jorgenson** have been actively developing grade-specific lesson plans that tie into the Next Generation Science Standards and Common Core. Matt completed a tracking and trail camera unit with all three of Caroline's 1st grade classes, and took taxidermy specimens of animals that the kids saw on the wilderness campus trail camera. It gave the first grade students and teachers alike the chance to see these native wild animals up close and ask questions about them. Two 2nd grade students served as junior educators and helped Matt present the information to other grade levels at the school. We think this program may have significant potential to be scaled up and/or implemented in other schools in the district.

Thanks in part to a grant from the Lane Family Fund of the Community Foundation of Tompkins County, during the 2015-2016 school year, Matt will spend each Friday assisting teachers with learning opportunities in the Wilderness Campus. The Wilderness Campus contains trails bordering Six Mile Creek, outdoor classrooms equipped with wifi, trail cameras, and more.

*"As a former Caroline student, I am so thrilled to be able to work with teachers and students at Caroline and I am proud to be part of the great things that are happening there."*

~Matt Sacco, Director of Nature Center Programs



Visitors observe the "Weather in a Tank" demonstration.



Matt Sacco works with children on the Caroline Wilderness campus.

**Kids Discover The Trail (KDT):** PRI offers educational programs at both of our educational venues to students in Tompkins County as part of KDT, a community accessibility project coordinated with the Discovery Trail and the Ithaca Public Education Initiative. KDT brings every 1st grade student in Ithaca, Groton, and Newfield to the Museum of the Earth and every 5th grader in Ithaca and Trumansburg to the Cayuga Nature Center. KDT expanded to include Newfield and Lansing school districts this year.



## Climate and Energy Education

**Trees Awake:** With support from the Park Foundation, **Ingrid Zabel** led Trees Awake!, a series of guided tree phenology walks in April and May of 2015 on the Nature Center's tree phenology trail. Participants made observations which were then submitted to the National Phenology Network database.

**Weather in a Tank:** In December 2014, PRI received a Weather in a Tank demonstration unit from Cornell EAS Professor Gang Chen, as part of an NSF Career Grant he was awarded. The unit is designed to help students understand how atmospheric and oceanic circulation impact climate.

## Teacher Resources

**Teacher Resource Day:** Providing free specimens and publications for teachers to take to their classrooms, PRI's annual Teacher Resource Day served over 70 teachers in October 2014, some from as far as Buffalo and New York City. Teachers were also treated to a behind-the-scenes tour and a lecture by Cornell EAS Assistant Professor Toby Ault titled "Hurricanes and climate change: what should we expect?" Teacher Resource Day continues to be sponsored by Chemung Canal Trust Company.

**Science Teachers Association of New York State (STANYS):** PRI continues to have a strong presence at STANYS. Staff members **Rob Ross**, **Samantha Lesser**, **Don Duggen-Haas**, and **Dayna Jorgenson** attended the annual meeting in early November 2014.

**New York Earth Science Teachers Association (NYESTA):** Chartered in 2013, NYESTA is the newest state chapter of the National Earth Science Teachers Association (NESTA). NYESTA held their first annual Geologic Field Conference in the Finger Lakes Region at the Museum of the Earth in July 2014. **Don Duggen-Haas** gave the keynote speech at their closing banquet and was recognized with the organization's Distinguished Service Award at their conference in July 2015.



"Teacher Resource Day" in the Museum classroom.

## Traveling Exhibits

**Maize: Mysteries of an Ancient Grain:** This exhibit was created in collaboration with the Institute for Genomic Diversity at Cornell University and the Genetic Architecture of Maize and Teosinte Project, and was funded by the National Science Foundation. Focusing on the genetics and evolution of corn, along with its role in human history, this exhibit was hosted during the fiscal year by the Great Swamp Conservancy, the Science Center of Iowa, SciWorks in North Carolina, and the Reading Public Museum. It is currently booked until November 2016.

**Did Dinosaurs Poop?** This child-friendly traveling exhibit is designed to present the studies of paleontology, evolution, and ecology through hands-on interactives and quirky illustrations. On tour since February 2013, this exhibition was hosted by Dayton Society of Natural History in FY15.

**Weird Weather:** Presenting information on the regional and global impacts of climate change, this kiosk has been on tour across New York State since 2012. In August 2014, Weird Weather was on display at Empire Farm Days, an agricultural expo in Seneca Falls, and in the Youth Building at the New York State Fair in Syracuse August 21-September 1, 2014.



Visitors learn about the genetics and history of corn in PRI's popular travelling exhibit, "Maize: Mysteries of an Ancient Grain."



A dino poop gets the royal treatment in PRI's "Did Dinosaurs Poop?" exhibit.



## The following Education grants were active during FY2015

### National Science Foundation:

*Enhanced Earth system teaching through Real Earth Inquiry:* NSF DRL 0733303, Aug 15, 2007 - July 31, 2015, \$1,763,588.

*Fossil Finders: Using Fossils to Teach about Evolution, Inquiry and Nature of Science:* NSF DRL 0733223, January 1, 2008 - December 31, 2015, \$266,951 to PRI (partnership with Cornell and U Georgia departments of education).

*Temporary exhibition and teacher professional development resources on the carbon cycle and climate change:* NSF 1049033, April 1, 2011 - March 31, 2016, \$60,736 to PRI (outreach on behalf of research at Cornell University).

*Traveling exhibit and teacher professional development on evolution of maize, associated with maize genetics research:* NSF IOS 1238014, May 15, 2013 - April 30, 2018, \$217,124 to PRI (outreach on behalf of research at Cornell University).

*Dissemination for the Critical Zone Observatory Program National Office at Cornell University:* NSF EAR 1360760, May 1, 2014 - April 30, 2018, \$100,000 to PRI (outreach on behalf of Cornell University and the CZO network).

*Outreach on atmospheric circulation in climate programming at the Museum of the Earth:* NSF AGS 1349605, June 1, 2014 - May 31, 2019, \$22,000 to PRI (outreach for NSF CAREER award to Gang Chen at Cornell University).

### Institute for Museum and Library Services:

*National Leadership Grant:* Developing resources for K-12 and Museum personnel to improve public understanding of evolutionary trees. December 1, 2012 – November 30, 2015, \$32,441 to PRI (lead organization UC Berkeley; partnering organizations Yale Univ., Univ. Kansas, PRI).

### National Endowment for the Humanities:

*Planning proposal for a traveling exhibition on the history of women in American paleontology.* October 1, 2014 - September 30, 2015, \$60,000.

### Park Foundation:

*Developing K-12 and public programming on climate change at the Cayuga Nature Center.* April 1, 2014 - March 31, 2015, \$25,000.

Former PRI Director Katherine Palmer poses with fossils in the 1960s. Palmer was one of the few women entering the paleontological field in the 1920s and studied under Gilbert Harris at Cornell University. She had a long, illustrious career in paleontology, specifically studying Tertiary mollusks. In FY15, The National Endowment for the Humanities funded a planning proposal for a travelling exhibit focusing on the history of women in American paleontology.



Since signing an agreement of affiliation in 2004, PRI continues to strengthen its numerous formal and informal relationships with Cornell University, including NSF-funded outreach projects, individual staff teaching at both undergraduate and graduate levels, and the housing of specimen collections previously held at the University. PRI's "home department" at Cornell, Earth and Atmospheric Sciences (EAS), continues to be the base for many of these activities.

## Teaching and Research

The Museum of the Earth continues to serve as a teaching resource for Cornell students. Many courses require their students to participate in exercises at the Museum, including Evolutionary Biology and Diversity, which has over 200 students per semester. Multiple PRI staff members also hold faculty positions in Cornell's Department of Earth and Atmospheric Sciences (EAS).

**Warren D. Allmon**, Director of PRI, taught the equivalent of two full undergraduate courses during FY15. During the summer of 2014, he taught "Evolution and Marine Diversity" at Cornell's Shoals Marine Lab off the coast of Maine. Warren also advised two PhD candidates in Geology and two undergraduate thesis projects.

**Paula M. Mikkelsen**, Associate Director for Science, taught the two-week course "Invertebrate Zoology" at Shoals Marine Lab during the summer of 2014.

**Gregory P. Dietl**, Director of Collections and Curator of Cenozoic Invertebrates, continues to supervise two PhD students in Geology.



Director of Publications Paula Mikkelsen (left of lobster) and students from her "Invertebrate Zoology" course at Shoals Marine Lab.

**Robert M. Ross**, Associate Director of Outreach, teaches a summer course called "Earth in the News" for EAS.

**Maureen Bickley**, Museum Education Manager, teaches a one-credit Fossil Preparation course in the Museum of the Earth's Prep Lab.

## Outreach

PRI continues to facilitate public outreach with Cornell through NSF-funded projects, and by serving as an "outreach arm" for EAS. PRI ran a booth alongside EAS at Barton Hall for New Students' Weekend in August 2014 and for Reunion in June 2015 in Stocking Hall. PRI has also assisted EAS as needed with alumni reunions. PRI provides venues for EAS and other Cornell faculty and graduate students to present their research through public talks and exhibits. A growing area of interaction is in scientific research projects funded by NSF. PRI serves as a subcontractor by providing "broader impacts" outreach for Cornell scientific research projects funded by NSF, including the Critical Zone Observatory Network (see p. 13).



Students sort through materials, looking for invertebrates during a summer course at Shoals Marine Lab.



# Museum of the Earth

Through its specimen-rich, hands-on interactives and visual exhibitions, the Museum of the Earth provides meaningful learning experiences about the history of life on Earth to a range of audiences, from local school classes to visitors from around the world.

## Paleoart from the Smithsonian

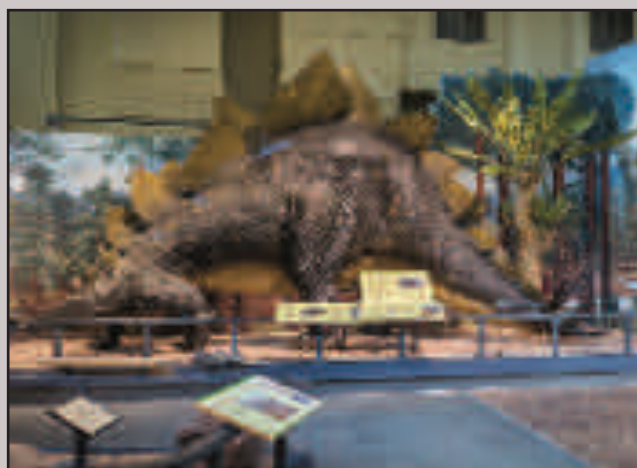
In April 2015, the Museum began to receive a variety of exhibit elements that have been permanently transferred from the Smithsonian's National Museum of Natural History (NMNH). These include five ancient sea ecosystem dioramas, life-sized models of plant life from various time periods, and life-size models of "Steggy" the 18-foot long *Stegosaurus*, and the giant flying reptile *Quetzalcoatlus*, which had a 36-foot wingspan. The dioramas were produced by acclaimed artists George and Paul Marchand, and Terry Chase, and have been featured in many geology textbooks over the years.



Straight nautiloids in the Ordovician diorama by George and Paul Marchand, made in 1955 for the NMNH.

## History of "Steggy" the *Stegosaurus*

"Steggy" the *Stegosaurus*, who arrived at the Museum of the Earth in April 2015, bears an interesting and unique history. The life-sized 18-foot long *Stegosaurus* was created by the Milwaukee Papier Mache Works, Inc. (under the guidance of scientists at the NMNH) for the Louisiana Purchase Centennial Exposition (World's Fair) held in St. Louis in 1904. Once the fair ended, Steggy was displayed in Portland, Oregon in 1905 as part of another exposition celebrating the 100th anniversary of the Lewis and Clark expedition. Steggy made his trek to the Smithsonian soon after, and had been on display in the NMNH Fossil Hall until 2014, when the NMNH Fossil Hall closed its doors for renovations. Shortly after, NMNH and PRI made an agreement to permanently transfer Steggy to the Museum. After arriving in three pieces, Steggy has been beautifully reconstructed by curators and preservation experts while on display in the newly renovated Late Jurassic themed, early learner friendly Dino Lab.



## Dino Lab Renovations

Thanks to donor support in the 10th Anniversary Campaign, PRI's exhibits staff, headed by Director of Exhibitions **Beth Stricker**, redesigned and renovated our Dino Lab to ensure that our permanent exhibitions continue to be fun, interactive, and informative for adults and children alike. Included in renovations are the 18-foot long Steggy the *Stegosaurus*, along with a background mural by local artist **Mary Beth Ihnken**. Our new dinosaur nest and book nook also increase opportunities for children's activities and hands-on learning. The new exhibit was completed and opened in late summer 2015 (see pp. 28-29).

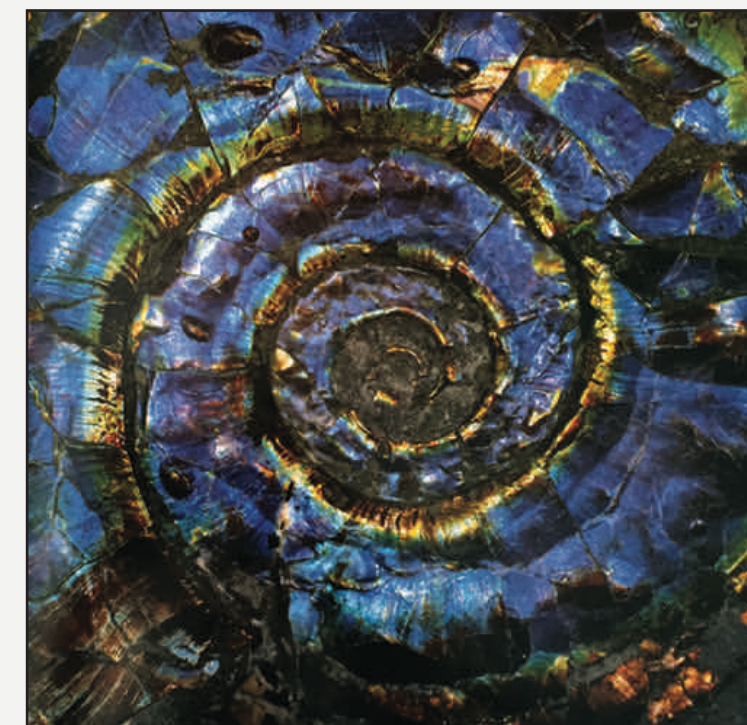
## Temporary Exhibits

**Under the Isles of Shoals: Archaeology on Smuttynose Island (May 28 - November 17, 2014):** In partnership with Shoals Marine Lab, the University of New Hampshire, and the Discover Portsmouth Center, this exhibit dove into over 6,000 years of hidden history on the Isles of Shoals, a cluster of small rocky islands in the gulf of Maine. More than 12,500 visitors explored the rich human and natural history of these islands through authentic artifacts and specimens.

**Ancient Microworlds (June 19 - September 15, 2015):** This photography exhibit shattered the barrier between science and art by capturing the rich patterns and colors of fossilized organisms. For over 12 years, scientist Giraud Foster and artist Norman Barker have used light-scanning macrographic equipment of their own design to capture the colorful, intricate nature of fossils presented in this exhibit.

## Quirks of Nature (December 5, 2014 - June 8, 2015):

Featuring comics by science communicator Rosemary Mosco, this exhibit paired quirky illustrations with fossils, taxidermy, live animals, and more. Labels explaining the hard science behind each comic were contributed by experts from various institutions including the Yale Peabody Museum of Natural History, the Institute of Marine and Coastal Sciences at Rutgers University, and Cornell University. Elements of Mosco's work can be seen throughout this report.



Blue Ammonite from the Ancient Microworlds exhibit.



A student examines a specimen during a summer course at Shoals Marine Lab.



School students visit the Museum on a school field trip.



# Cayuga Nature Center

The Cayuga Nature Center, a public education venue of the Paleontological Research Institution, provides an opportunity for nature enthusiasts of all ages to learn about environmental and outdoor education in a fun and engaging way.

## Renovations

Following the completion of the major renovation to the historic 1939 lodge building in 2013-14, which included a new entrance and major improvements to handicap accessibility, upgrades to exhibits continued over the past year, including improvements to the temporary fish exhibit in the new lobby. Maintenance and assessments of the Nature Center's 6-story TreeTops tree house and 17 bridges were also made to ensure that the structures are in good condition. Continued development of the Butterfly Garden has also been a major focus.

## Animal Collection Expansion

The Nature Center's animal collection is extremely popular and acclaimed by many visitors. Nature Center staff, **Amanda Moshier** and **Sarah Grove**, have been making upgrades to animals, signage, and climate-control in the live animal room as part of ongoing renovations. **The animal collection is pleased to have acquired 31 new individuals during the past year, including:**

- |                             |                   |
|-----------------------------|-------------------|
| 6 Green tree frogs          | 1 Ringneck dove   |
| 4 Rats                      | 1 Red-tailed Hawk |
| 4 Cockroaches               | 1 Bearded dragon  |
| 3 Wood frogs                | 1 Crested gecko   |
| 3 Millipedes                | 1 Day gecko       |
| 2 Ferrets                   | 1 Tarantula       |
| 2 Dart frogs (+11 tadpoles) | 1 Perch           |



"Ace" the red-tailed hawk arrived in January, 2015.

## Ace the Red-tailed Hawk

Ace, the Red-tailed Hawk, is an exciting addition to the Nature Center family. Ace was found injured on the side of the road in December 2014, and brought to Cornell University's Wildlife Health Center for emergency care. After determining that Ace had a broken left wing and trauma had blinded his left eye, it was decided that Ace could not be released to the wild. Ace arrived at the Nature Center in January 2015, where animal staff began intensive training to familiarize him with human interaction. With steady progress each day, Ace was able to heal from his injuries and was introduced to an outdoor enclosure. Ace is now able to take flight and tolerate glove handling, with future hope that Ace will be able to free fly as part of live animal programming. Ace is proudly on display as an animal ambassador for the public to learn from and Nature Center staff hope to have him for many years to come.

*"I am honored to see the Nature Center grow over the years. I am particularly proud of the improvements in animal collections, and privileged to be working with Ace. I enjoy coming to work each day to work with the animals and to be with my co-workers."*

~Sarah Grove, Assistant Manager of Animal Collections



The Nature Center is home to a variety of animals, including exotic lizards such as this blue-tongued skink.

**TEAM Challenge Ropes Course:** TEAM Challenge hosts a wide variety of groups, who traverse by ropes through more than 25 high and low course elements, to develop cooperative problem-solving skills and build team unity. From 3rd graders to college students and corporate groups, TEAM Challenge continues to be enjoyed by a wide variety of participants. More than 1,754 visitors participated in TEAM Challenge during the 2014 season.

**Kids Discover the Trail (KDT):** 521 elementary students in Tompkins County were able to visit the Nature Center through KDT. Every 6th grader in Trumansburg also attended through a TEAM Challenge field trip. This team building experience helps prepare kids for the transition into middle school.



Girl Scouts enjoy an afternoon of team building on the Team Challenge ropes course.

**Caroline Elementary Wilderness Campus:** For the second year, the Nature Center has partnered with Caroline Elementary to deliver hands-on learning experiences. (see p. 14). This year, PRI was awarded a \$10,000 grant from the Lane Family Fund of the Community Foundation of Tompkins County to expand this popular program.

## Events at the Cayuga Nature Center

**Marking Seasonal Changes with Events:** In keeping with the mission of the Nature Center, the venue has moved towards a model of four major seasonal events on the weekends closest to the equinox or solstice. The annual **Maple Festival** marked its 34th year, and in addition to enjoying music and pancakes, visitors were able to learn about maple syrup production and the seasonal changes that lead to the production of sap. Other seasons were marked by the **Summer Solstice Festival**, which celebrated butterflies, the very successful **Fox Trot Fall Festival and 5K Run** at the September equinox, and **Winter Solstice Festival**, which celebrated the night sky and the lighting of TreeTops tree house.



Maija Cantori, Director of Visitor Services, serves pancakes during the 34th Annual Maple Festival.



# Community Accessibility

Making sure that PRI's venues and programs are accessible to all - regardless of ability to pay - is a growing focus at PRI, knowing that the future of Earth and environmental science will rely on the next generation of science and environmental enthusiasts. PRI's Community Accessibility Program (CAP) strives to make Earth science and environmental education available to everyone, regardless of resource barriers or special needs.

**Winter Free Days:** Hosted the first Sunday of each month from January to March, PRI offers free admission to both the Museum of the Earth and the Cayuga Nature Center. More than 850 visitors participated this year.

**Community Day:** Every May, PRI celebrates our local community through a day of special events and activities at no admission charge. More than 100 visitors took part in this year's Community Day.

**Agency Memberships:** PRI partners with social service organizations and agencies to provide free passes, group tours, and discounts on special programs and field trips as well as summer camp opportunities.

**Blue Star Museums:** As part of the Blue Star Museums program, PRI and over 2,000 partnering museums offer free admission to active-duty military personnel, including the National Guard and Reserves, and their families from Memorial Day to Labor Day.

**Library Membership Program:** PRI currently partners with the Ulysses and Watkins Glen libraries, which loan out passes to both of our venues to library members. This program is set to expand in the next year.

**Backpack Program:** In partnership with the Food Bank of the Southern Tier's Backpack Program, PRI sends special event passes to disadvantaged youth throughout Tompkins County.

**In-kind Giving:** Along with these programs, PRI donates free memberships to community groups and organizations for use in fundraising efforts. Over \$3,040 worth of memberships were donated in FY2015.



The following businesses sponsored one or more of our accessibility initiatives during FY15. If you are interested in supporting accessibility at PRI, contact [development@priweb.org](mailto:development@priweb.org) today!



## Young Naturalist Access Program (YNAP)

YNAP is a donor and sponsorship supported program that provides Tompkins County youth in need free access to a one-year YNAP Youth Membership to the Paleontological Research Institution. This membership provides young people and their families/caregivers all of the benefits of a regular PRI membership plus free access to all of our ticketed events, such as Maple Fest and local fossil field trips. YNAP also offers members the opportunity to take advantage of a free week of summer camp at the Cayuga Nature Center. YNAP has worked in collaboration with local non-profits, schools, and community groups to increase awareness of YNAP services to families across Tompkins County.

In the first months since YNAP's inception, more than 120 memberships and 84 camp weeks were provided to youth and their families. Through further efforts and development, we hope to be able to offer all youth who qualify for free or reduced lunch in Tompkins County the option of participating in YNAP. More information on YNAP and how to support this program can be found on our website at [www.priweb.org/YNAP](http://www.priweb.org/YNAP).

### YNAP Membership Quotes:

*"My son wants to be a paleontologist and an archaeologist when he grows up. We are a low-income family and this camp is out of reach for us. He would be so grateful to even have one day. He's been asking for months for even a Saturday visit."*

*"[my child] loves nature, animals, climbing and survival skills. This program would give her the opportunity to be actively involved in these activities. I am a single mom of four children and also a full-time student. Camp is not a possibility without a scholarship."*

*"I want my daughter to grow in her appreciation for nature and the fascinating world we live in. I want her to grow in her confidence being with other kids without mom and dad."*





# Interns & Volunteers

From exhibit maintenance and operations, to collections and development, our volunteers and interns assist staff in all departments. PRI would like to recognize all volunteers, service groups, and interns for dedicating their time and effort towards PRI's institutional goals.

## Interns

PRI interns come from a diverse background of studies, including environmental science, archival studies, museum graduate studies, photography, geology, and more. Not only do interns gain valuable work experience and skills, but their efforts are crucial to PRI undertakings.

PRI would like to recognize all of the following interns for their work during the fiscal year:

Rudy Bentlage  
 Kelly Bogart  
 Keith Borrino  
 Christine Brussell  
 Adriana Clark-Sevilla  
 Alison Copenhaver  
 Colleen Davis  
 Mimi Delfs  
 Elizabeth Edgerton  
 Lily Eisermann  
 Dawson Epstein  
 Wray Gabel  
 Olivia Hamlin  
 Greta Healy  
 Linda Hindall  
 Noah Hunt  
 Eme Iban  
 Amanda Jensen  
 Evan Jones  
 Tahera-Rafia Kassam  
 Amanda Kelly  
 Stephanie Krail  
 Jessica LaMay  
 Alexis Lanza  
 Camille Mangiaratti  
 Cruz Marin  
 Alana McGillis  
 Mary McKean  
 Megan McKelvey  
 Emma Mosier  
 Taina Moynihan  
 Helena Ortiz  
 Katherine Peck  
 Page Plocic  
 Tyler Pollock  
 Brian Powell  
 Selena Richer  
 Ryan Ridder  
 Julia Stephens  
 Drew Tallon

Will Tifft  
 Annalee Tweitmann  
 Michael Valenti  
 Annabelle Vanderwerf  
 Adam Wawro  
 Sarah Wayman  
 Vanessa Wikel  
 Savannah Wilson  
 Laura Wu  
 Laura Young  
 Marissa Zuckerman

## Volunteers

PRI is grateful to the following individuals for their contributions of time and effort during the fiscal year:

Elizabeth Abend  
 Alexandra Allmon  
 Maria Altier  
 Elizabeth Altier  
 Andrew Antwine  
 Aubrey Balzani  
 Kyle Banks  
 Tiffany Bartz  
 Daniel Baskin  
 Sam Benedict  
 Deborah Bilinski  
 Lauren Binns  
 Nicole Blagg  
 Deanna Brodsky  
 Janice Brown  
 Dick Burlew  
 Peg Burlew  
 KC Burlingame  
 Devin Cannon  
 Glenn Caslick  
 Jacqueline Celano  
 Andrea Cerruti  
 Pat Charwat  
 Kalyani Chitrao  
 Alexandra Chiusano  
 Andrea Clark  
 Hailey Cote  
 John Cusano  
 Amy Cusano  
 Eliza Diament  
 Suellen Dias  
 Barbara Dimock  
 Lenore Durkee  
 Chloe Elberty  
 Elizabeth Elton  
 Donna Eschenbrenner  
 Brielle Fischman  
 Molly Friedeborn  
 Emily L Frisa  
 Walter Gates  
 Ron George  
 Taliet Gerratsen

Aaron Godert  
 Allen Gordon  
 Josh Greenfield  
 Mathew Griffin  
 Martin Hackett  
 Whit Hairston  
 Evvie Halpert  
 Meridith Hicks  
 Melissa Hodde  
 Julia Hoshino  
 Jill Howland  
 Matt Jasinski  
 Larry Jensen  
 Viola Jones  
 Eric Juers  
 Caroline Kellner  
 Tasnuva Khan  
 Shelby Klemann  
 Bill Klose  
 Ben Komor  
 Artem Kovalenko  
 Frank Kozlowski  
 Debbie Krueger  
 James Leet  
 Curt Lindy  
 Lynette Lux  
 Samantha MacMillan  
 Emily Mahr  
 Mike Marano  
 Deborah Marinstein  
 Eugene Marks  
 Kelly Martin  
 Arthur Masloski  
 Heather McEver  
 Phyllis McNeill  
 Allan Meritt  
 Doris Meritt  
 Ken Miller  
 Taylor Minster  
 Russell Morgan  
 Deb Nero  
 Marcella Nolan  
 Seldoan Oshoe  
 Hannah Owh  
 Sasha Paris  
 Trevor Partridge  
 Austin Pedroni  
 Ken Peters  
 Elena Pfisterer  
 Jonathan Piacentino  
 Isaac Piha  
 Emily Plante  
 Eric Poysa  
 Kim Ramm  
 Meggie Ramm  
 Benjamin Reynolds  
 Luke Robbins  
 Roy Roberts  
 Nate Robertson  
 David Rucci

Mark Sacco  
 Amanda Schmitt  
 Reba Schmitt  
 Sarah Schneider  
 Brian Scholten  
 Phoebe Shalloway  
 Liana Sicroff  
 Tobi Simon  
 Barbara Skoblick  
 Ethan Skutt  
 Andrea Slavney  
 Grace Smith  
 Daniel Snyder  
 Abby Snyder  
 Jennifer Tegan  
 Jenny Tompkins  
 Helen Tosteson  
 Kaitlyn Tynczuk  
 Ellen Valentino  
 Avery Vilbert  
 Mitchell Vogel  
 PJ Voudouris  
 Alyssa Weissman  
 James Leet  
 Martin Welych-Flanagan  
 Alyssa Wetterau  
 Cathy Whalen  
 Matthew Wheeler  
 Michelle Wheeler  
 Jimmy Whitehead  
 Don Wilson

## Service Groups & One-time Volunteering

Broome Disability Volunteers  
 Pre-Orientation Service Trip from Cornell University  
 Alpha Phi Omega Gamma Chapter service fraternity  
 Maple Festival Volunteers (many local college students)  
 Nestwatch  
 GS Tr 40028  
 Into the Streets  
 Unity House Aides

## Volunteer Highlights:

Deb Bilinski and Ellen Valentino have helped with restoration of exhibits from the Smithsonian transfer, and have expanded beyond the lab with their talents. They cleaned and repaired the tree which is now in the Jurassic Exhibit behind the *Stegosaurus*. They also produced a training manual that will be used to train more volunteers for the *Vanished Worlds: a peek into paleoart from the Smithsonian Institution* temporary exhibit.



Volunteer Deb Bilinski assists in preparing a tree model for an exhibit placement.

# of Volunteers: **252**  
 Hours: **8,115** (at PRI and both educational venues combined)

# of Service Groups: **8**  
 Hours: **445.15**

# of Interns: **51**  
 Hours: **3,926** (over the fiscal year)

Volunteers and interns contributed **12,041** hours combined, equivalent to the work of **6** full-time staff.



This year, interns came to PRI from:

University at Albany  
 Cornell University  
 Hamilton University  
 Hartwick College  
 Ithaca College  
 Marcellus High School  
 Marietta College  
 Skidmore College  
 Slippery Rock University

SUNY ESF  
 SUNY Oswego  
 SUNY Geneseo  
 St Lawrence University  
 Syracuse University  
 Rochester Institute of Technology  
 University of British Columbia  
 University of Kansas



# Donor Support

## Annual Fund

### Major Gifts (\$20,000+)

Anonymous  
Philip and Susan Bartels

## Darwin Society

### (\$10,000-\$19,999)

Don and Dolly Wilson

## Devonian Society

### (\$5,000-\$9,999)

Derek and Leora Kaufman  
M&T Bank

## Cayuga Society

### (\$2,500-\$4,999)

Merle Adelman and Ron Menner  
Brian Bauer  
John W. Hermanson and Lynn Swisher  
Linda Ivany and Bruce Wilkinson  
Museum Association of New York  
Melzar T. and Jane Richards  
Roger D. K. Thomas  
Armour Winslow

## Gorges Society

### (\$1,000-\$2,499)

Anonymous  
John Allen and Ann Callaghan  
Warren Allmon and Jennifer Tegan  
Elisabeth Boas  
Jim and Terry Byrnes  
CFCU Community Credit Union  
Cornell University  
Nellie Corson  
Robert G. and Jane V. Engel  
Foundation  
Howard and Erica Evans  
Joanne V. Florino  
Karl Flessa and Mari Jensen  
Barbara Johnson Foote  
Nelson and Whit Hairston  
John Handley and Kym Pocius  
Bob and Joan Horn  
William Kirchgasser  
Harry and Sarah Lee  
Jean and Daniel McPheeters  
James Morin and Myra Shulman  
Purity Ice Cream  
Frank and Rosa Rhodes  
Jean F. and Elizabeth Rowley  
Sciarabba Walker & Co., LLP  
Jan F. and Susan Suwinski  
David and Marisue Taube  
Carol and Mack Travis  
Wendy Leopold Wolf,  
In memory of Carl Leopold

## \$500-\$999

Ric Allen  
David and Mary Lee Banfield  
Don Bazley and Ithaca Fans of Neil Young  
Chemung Canal Trust Company  
Community Foundation of Tompkins  
County  
James and Liskin Cordes  
Shirley K. Egan  
Stanley Epstein  
Jim and Judy Fogel  
Russell Fuller  
Bryan L. Isacks and Marjorie Olds  
Teresa E. Jordan and Richard W.  
Allmendinger  
Melinda Lewis  
Mid America Paleontology  
Society (MAPS)  
Catherine McCarthy and Paul Davis  
Amy McCune and David Winkler  
Anthony and Patricia McLean  
Ann Molineux  
Katy and Art Pearce  
Edward B. Picou Jr.  
John and Mary Lou Pojeta  
David J. Schuller  
Snug Planet  
Arthur Waterman

## \$250-\$499

Anonymous (3)  
Ellen Avril  
Suzanne and Curtis Banta  
Robert Barlow  
Jennifer and Alan Biloski  
Center for Transformative Action  
ChameleonJohn.com  
Tom and Barbara Dimock  
Robert Elias  
J. Mark Erickson  
Finger Lakes Beekeepers Club  
Karen Goodman  
Greenstar Cooperative Market  
Carole Hickman  
Roald and Eva B. Hoffmann  
Leah Horwitz  
Ronald Hoy and Margaret C. Nelson  
Andre and Jean Jagendorf  
Daniel Jorgenson  
Marvin and Annette Lee Foundation  
Peter and Susan LeVangia  
Alan Leviton, In memory of Dr. J. Thomas  
Dutro, Jr.  
Rob and Maggie Mackenzie  
Peter and Mary Beth Marks  
David and Kani Meyer  
Stephanie Meyer  
Merck Foundation  
Marvin P. and Allison Pritts

Kimberly Ramm  
Sam Peter Furniture & Bedding  
Mary Shuford  
Roger and Carole Sibley  
Paul Steiger  
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James Morin and Myra Shulman  
Michelle Richardson  
Jansen Smith  
Tompkins County Tourism Program  
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Catherine and Michael Whalen



# PRI's Anniversary Campaign

In 2013, PRI celebrated the 10th anniversary opening of the Museum of the Earth with a fundraising campaign, *Rock the Future*, to improve our permanent exhibits in the Museum and complete a major phase of renovation to the lodge at the Cayuga Nature Center. We raised just under \$1.2 million, which allowed us to install major new coral reef and glacier exhibits in the Museum, give the lodge a beautiful new public entrance and lobby, and make it more handicap-accessible.

Encouraged by this success, in 2014 we embarked on an additional effort to support new programs to go with these improved facilities, with a goal of raising another \$1 million by June 2016 with a new campaign, *Rock the Future II: Sustaining the Future of Earth Science Education*.

We are pleased to announce that as of the end of FY15, we are three quarters of the way toward this ambitious goal. As we work toward raising the remaining \$250,000 during FY16, we have been extended a very exciting and generous opportunity. For every gift of \$10,000 or more we receive prior to June 30, 2016, an anonymous

donor will match one half of it, up to a total of \$125,000, as a gift in the 2017 fiscal year. This means that every gift of \$10,000 or more will not only help us complete this important fundraising effort, but will also provide crucial support beyond the campaign, into the following fiscal year, allowing us to plan more effectively. Thanks to the generous support of friends, PRI has achieved great things in - research, collections, publications, and education. This support truly does, and will continue to sustain PRI into the future.

**Thank you to those who have supported Rock the Future II: Sustaining the Future of Earth Science Education in FY2015.**

### Major Gifts (\$20,000+)

Anonymous (2)  
Philip and Susan Bartels  
Peter and Ursula Browning  
Linda Ivany and Bruce Wilkinson  
D. Jeffrey Over  
Kurt Over  
Armour Winslow

### All gifts up to \$19,999

Ahimsa Account at Fidelity Charitable  
Elisabeth Boas  
Bob and Vanne Cowie  
H. Allen and Jane Curran  
Joanne V. Florino

**Thank you, to those who've supported the campaign over the past year!**



Child exploring the Glacier exhibit.



Children sit on larger-than-life dinosaur eggs while listening to a story in the Dino Lab.



Exotic fish from the Indo-Pacific and Caribbean swim amongst the many varieties of coral in the Coral Reef exhibit.

Jim and Judy Fogel  
Nelson and Whit Hairston  
John Handley and Kym Pocius  
Maxie's Supper Club  
Jean and Daniel McPheeters  
James Morin and Myra Shulman  
Melzar T. and Jane Richards  
David and Marisue Taube

A special thank you to all the donors who helped us reach our goal for the first phase of our 10th Anniversary Campaign, *Rock the Future Phase 1: Inspiring the Earth Scientists of Tomorrow, 2013-2015.*

### (\$20,000+)

Anonymous (3)  
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Gary Sanderson  
Kelly Morris and David and Phoebe Shalloway  
Marilyn and Stephen Westlake  
Ingrid and Mark Zabel



Early learner-friendly exhibit elements in the new Dino Lab.



# Supporting PRI

**Annual Giving and Membership:** Those who give to PRI on an annual basis, either in the form of a donation or by purchasing a membership, truly help to sustain the organization, which is, like many non-profits in today's changing economy, heavily reliant on increasingly difficult-to-acquire grants. Membership dues and gifts from donors literally help us to keep our lights on by paying for operational costs that are seldom covered by grants. Gifts to the annual fund can either be open ended, or if you feel passionate about a particular area of the organization, you can designate your gift in support of anything that is in the operational budget. You can give one time, or set up monthly payments. Visit: [priweb.org/donate](http://priweb.org/donate).

**Sponsorship:** Between PRI's outreach initiatives and the programs and events at each of our public venues, there are myriad opportunities for sponsorship by businesses and organizations who are interested in supporting PRI's efforts to offer Earth and environmental science education and enrichment opportunities to a broad audience. PRI has a comprehensive sponsorship program which offers unique benefits to our supporters.

We are grateful to these businesses and organizations that have shown their support through cash sponsorship: To learn more about how you can support PRI, email [development@priweb.org](mailto:development@priweb.org).



## Planned Giving-Leave Your Mark

Just as fossils have left their mark, planned giving provides you the opportunity to do the same. It's easy to include PRI as part of your estate planning and support PRI's work in study of paleontology and Earth science.

Your generous donation will serve PRI and its endeavors for generations to come.

To make a bequest through estate planning, simply include the language: "I give a bequeath in the sum of \$\_\_\_(or percent of my residuary estate) to the Paleontological Research Institution, an educational institution in Ithaca, NY, to be used in support of its charitable purposes."

To learn more about planned giving opportunities and estate planning, please contact Manager of Individual Giving and Membership, Georgia Lesh at (607) 273-6623 x 11.

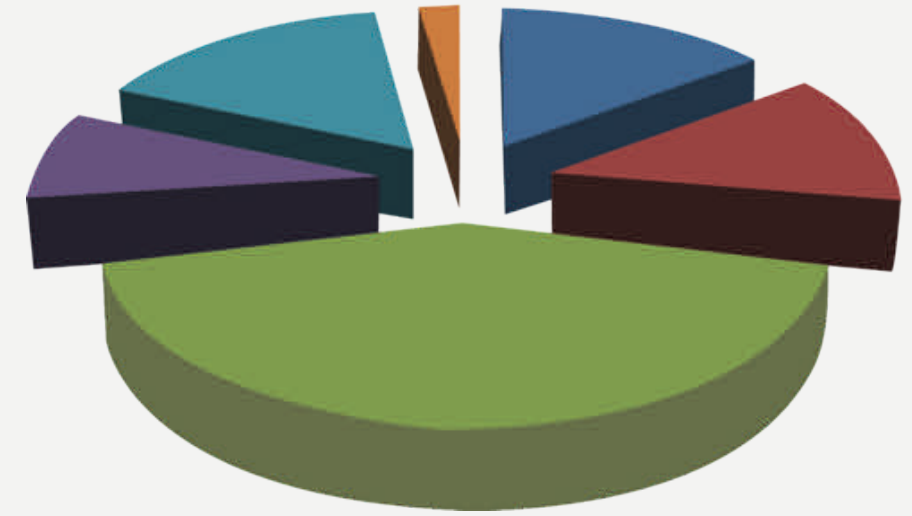


A highly detailed "stacked" photograph of a *Greenops boothi* Trilobite, taken by RIT intern, Keith Borrino.

# Statement of Activities

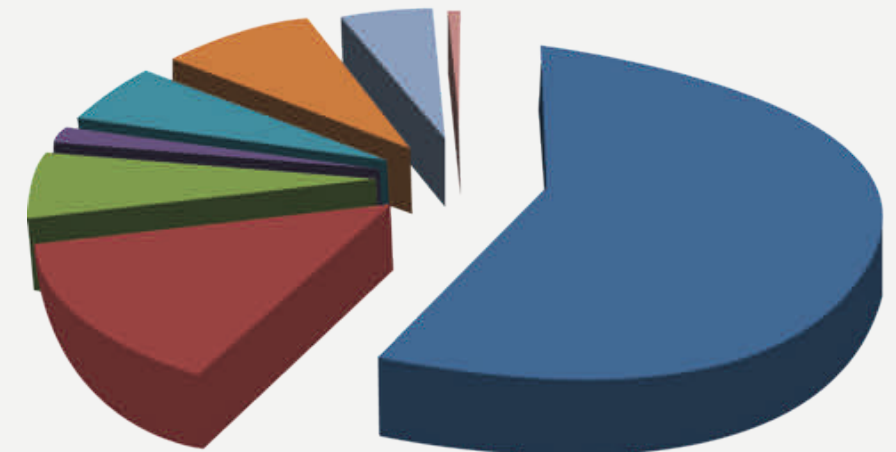
## Revenue

Grant Revenue Released from Restriction	\$365,507
Gifts Released from Restriction	\$305,631
Unrestricted Giving & Membership	\$1,106,315
Funds Functioning as Endowment	\$210,000
Earned Revenue	\$395,904
Other Revenue	\$56,074
<b>Total Revenue</b>	<b>\$2,439,431</b>



## Expenditures

Payroll and Related Benefits	\$1,371,009
Depreciation	\$326,430
Interest Expense	\$155,753
Professional Fees	\$42,745
Other	\$144,284
Building and Maintenance	\$203,671
Grant Subcontract Expenses	\$123,549
Exhibit Expenses	\$15,836
<b>Total Expenditures</b>	<b>\$2,383,277</b>





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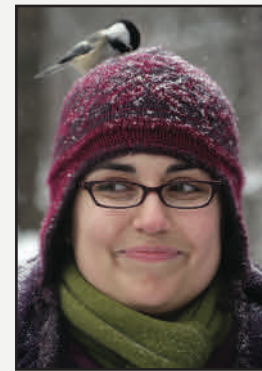
We would like to thank the following colleagues who moved on during FY15:

- \* Alex Cavallo
- \* Ellen Cadigan Hellman
- \* Laura Komor
- \* Samantha Lesser
- \* Andrew Matthiessen
- \* Emily McKittrick
- \* Alicia Michael

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 Dr. Richard Waite: Invertebrate Paleontology, Paleobiogeography, Muttenz, Switzerland  
 Dr. Karl Wilson: Devonian Paleontology, Binghamton, NY

# Rosemary Mosco, Scientific Communicator



## About My Work

I've always found myself drawn to both science and art. I use comics to express scientific ideas and to share my love for the natural world.

When I was growing up, I divided my time between bird watching, fossil collecting, and drawing. I made my first cartoons for my high school newspaper. In college I studied Anthropology, a field where science and art meet in astonishing ways. Later, I earned an MS from the University of Vermont's Field Naturalist Program. Two years spent studying nature in the northeast woods gave me enough material for decades of comics.

These days I call myself a science communicator: a person who bridges the gap between scientists and the public through various communication methods, such as comics, radio, games, and field experiences. The term "science communicator" has only emerged recently, but I think it's an important designation. When science, art, and humor combine, people learn and have fun, and everyone-including wildlife-benefits.

## Mosco comic elements seen in this report:

Climate Change Shuffle (throughout this report)

Evolution Sucks (cover)

Newt Date (cover)

Preparing for Winter (cover)

Quotes about Climate Change (cover)

Secrete Weapon (cover)

The Ant and the Grasshopper (cover)

Toxic (Timeline, December)

When I Grow Up (timeline inspiration)



## Climate Change Shuffle

### Mosco caption:

As with all effects of climate change, the range shifts of animals are extremely complex. With this comic, I hoped to build a bigger picture of this issue without using a lot of complex terminology. Each panel refers to a set of studies, and the project took weeks of research. Climate change is such a complicated issue that even the smallest piece of outreach requires a lot of reading and care.

### Guest caption:

As Earth's temperatures continue to rise, many species are shifting toward the poles to follow the cooler temperatures they are used to. Plants and animals in mountainous areas are moving to higher, cooler altitudes. As they move higher, they have less and less livable area, and eventually they

will run out of space. Warming temperatures are allowing certain predators to invade new regions and take advantage of the native species. For example, crabs are returning to Antarctica for the first time in millions of years, threatening brittlestars and other bottom-dwelling creatures. Also in response to climate change, some species are now reproducing earlier in the year, but often the food they rely on to survive becomes available on a different schedule. Climate change is mixing up the geography, behavior, and ecology of species on the land and in the sea, all around the world.

**Richard B. Aronson**  
 Professor and Head, Department of Biological Sciences, Florida Institute of Technology

To see more of Mosco's work, visit [www.birdandmoon.com](http://www.birdandmoon.com)

Edited by: Stephanie Meyer and Marissa Zuckerman • Design by: Laura Finkbeiner • Rock the Future graphics by: Iron Design  
 Comic components by: Rosemary Mosco • Photos by staff and associates with a special thanks to Keith Borrino