Board of Trustees of the Paleontological Research Institution 2008-2009

OFFICERS
President, Rodney Feldmann, Kent, OH
Vice President, Percy Browning, Ithaca, NY
Secretary, Philip Bartels, Riverside, CT

MEMBERS
Laura Babcock, Columbus, OH
Philip Barns, Riverdale, CT
Larry Baur, Ithaca, NY
Perry Browning, Ithaca, NY
Harold Craft, Ithaca, NY
J. Mark Erickson, Canton, NY
Rudolph Feldmann, Kent, OH
Karl Hesse, Tucson, AZ
Jim Inglis, Ithaca, NY
Tim Killough, Freeville, NY
Linda C. Kony, Erieville, NY
Sara Jorden, Ithaca, NY

TRUSTEES EMERITUS
John D. Allen, Syracuse, NY
James Cordes, Ithaca, NY
J. Thomas Dutro, Jr., Washington, D.C.
Shirley K. Egan, Aurora, NY
Howard Estes, Moravia, NY
Robert T. Horne, Jr., Ithaca, NY
Patricia H. Kelley, Southport, SC
Harry Lee, Jacksonville, FL
Harry A. Lithgow, Lansing, CA
Amy Moore, Ithaca, NY

STAFF
Warren D. Allmon, Director
Leon Apgar, Maintenance and Operations Specialist
Sara Auer, Geoscience Education Resource Developer
Johanna Batman, Museum Operations and Programs Coordinator
Carlyn Buckler, Assistant to the Associate Director for Outreach
Scott Callan, Associate Director for Institutional Advancement
Eric Chapin, Exhibits Manager
Sarah Ciccone, Director of Exhibits
Kelly Croson, Outreach Project Support Associate
James Dale, PRI Cayuga Nature Center Collaborations Coordinator
Sarah Deppe, Development Operations Manager
Gregory Dietl, Director of Collections
Don Duggan, Education
Richard Kissel, Director of Teacher Programs
Michael Lucas, Associate Director for Administration
Paula M. Mikkelsen, Associate Director for Science and Director of Publications
Jack Mosley, Assistant Director of Museum Operations and Volunteer Coordinator
Judith Neug-Mayers, Collections Manager
Anna Pacheco, Assistant to the Director
Alicia Reynolds, Director of Museum Operations
Rob Run, Associate Director for Outreach
Samantha Santos, Director of Public Programs
Trishma Smrecak, Global Change and Evolution Projects Manager
Amie Patchen, Assistant to the Director
Alicia Reynolds, Director of Museum Operations

Edited by Scott Callen, Associate Director for Institutional Advancement and Billy Kepner, Director of Marketing and Communications © PRI 2009
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message from the President</td>
<td>2</td>
</tr>
<tr>
<td>Message from the Director</td>
<td>3</td>
</tr>
<tr>
<td>Research</td>
<td>4-6</td>
</tr>
<tr>
<td>Publications</td>
<td>6</td>
</tr>
<tr>
<td>Collections</td>
<td>7</td>
</tr>
<tr>
<td>Volunteers</td>
<td>8</td>
</tr>
<tr>
<td>Education</td>
<td>9-24</td>
</tr>
<tr>
<td>Development</td>
<td>25-31</td>
</tr>
<tr>
<td>Finances</td>
<td>32</td>
</tr>
</tbody>
</table>
MESSAGE FROM THE PRESIDENT | RODNEY FELDMANN

This has been quite a year to be PRI’s Board President! I can best characterize the events of the year as making more with less. Thanks largely to the PRI staff, we have come through a brutal global economic crisis in far better condition than most not-for-profit organizations, and certainly better than the economy in general. The key has been planning and that will also be the key that will assure our continued success.

To highlight just a few of this year’s successes, we have come through the year essentially meeting the austere budget approved last year. Part of that success was due to a very generous gift from the estate of William Grover of Ithaca, but it was also due to careful fiscal management throughout the year. The bleak possibility of staff reductions was averted, although a slight reduction in staff numbers resulted from attrition. Even in these difficult economic times, there seems to be light at the end of our fiscal tunnel.

The setting of some long-standing HVAC issues in the Museum has put us in the position of being able to decide the best course of action to assure proper, economical heating and cooling. This has been a long process and I believe it has resulted in a reasonable settlement. It certainly was the result of the best combination of efforts by the PRI Board and staff.

Marketing activity in the past year has resulted in several high-profile pieces, including one in a national in-flight magazine. It is always difficult to measure the direct effects of such efforts, but it is not coincidental that annual attendance in the Museum and facilities rentals were substantially above the previous year.

Consistent with the central focus of the Paleontological Research Institution, research activity and grant acquisition have increased well above previous years. Grants received include acquisition of compactors to increase modernize storage for the fossil collection, acquisition of a scanning electron microscope—a essential tool for conducting modern studies—and a grant to develop a major climate change exhibit. All this activity documents the research component in the Institution and was to some degree the stimulus for the donation of the largest single collection of Antarctic fossils to PRI by Dr. William Zinsmister. Success breeds success.

Concluding with the theme of planning as the key to continued stability, the Board, in collaboration with key staff members, is currently engaged in examining the future outlook for the Institution. We are examining the experiences of the past, the realities of the present, and the prospects for a strong future. Together, we will assure that PRI will remain strong.

Rodney Feldmann
President
PRI Board of Trustees

DEVELOPMENT | MEMBERSHIP

Rachel Covault
Allan Cran
Will Davies
Marjorie J. Decker
Norma Del Giudice
Donna Dempster-McClain
Gay D'Donneau
Jef Diver
David Dockerty
Dora Donovan
Ronald Dourville
Richard Dudden
Christian Duttwiler
Tom Drwinel
Frank Entesson
Andrew Farnham
David Field
Beth T. Fiorio
Merrill Foster
Susan Garrison
Walter C. Gates
Matt Gelder
Richard Gentile
Richard George
Michael Gibson
Thomas Ginter
Karen Goodman
Michael Grenier
Lindsey Groves
James Hagadorn
Martha Halperin
Jonathan Harrington
Edward Hart
Joan Hass
Sarah Hatch
David Heiseragen
Amy Hage
Stephen Henderson
Christopher Henley
Peter Herzberg
Diane Hillman
Richard Hoare
Rachel Hogancamp
Linda Homco
Cathleen Hothsall
Robert Hutchins
John Jacobs
Larry Jenkins
Larry R. Jensen
Thomas Kammer
Bill Kappel
Joseph Koshold
Bette Kehrt
Kenneth Kennedy
Mark Kolmer
Richard King
Susan Klofak
Karen Koseg
Christine Kola
Laura Krasnow
Deborah Levin
Bruce Liberman
John Linck
Deborah Litz
Gwen Lubey
Annie Lutz
Michael Marzano, III
Ronald McDowell
George McGhee
David Meyer
Timothy Miller
Arthur Mints
Charles Mitchell
Shane Miner
Michael Mongeon
Dennis Mooney
William Morgan
Corinne Muske
Margaret Nichols
Vincent O’Donnell
Michael Okneski
Karen Osburn
D. Jeffrey Oser
Barbara Page
Jwoono Park
Ronald Parsley
Pam Peabody
Randy Petron
Jasmina Petrovic
Rachel Philpous
Roy Plotnick
Margolena Post
Karen Powers
Bruce Rabe
Gerald Ragan
R. Gary Raham
Elizabeth Reed
Phyllis Renzetti
Mariana Rhodeas
Susan Rice
Norman Richards
Susan Ritter
Frank Rose
Thomas Rossbach
Mary K. Ryan
Samantha Sands
William Schottstaedt
Thomas Shelley
Margaret Shepard
Jitna Shupp
Sheryl Sinkow
Richard Smith
Jacqueline N. Smith
Susan Soboloff
Sam Spencer
James Sprinkle
Scott Sturatt
Kendal Stade
Jeri Stade
George Stephens
Gary Stringer
Jaciek Salanowsk
John Tate
Vladimir Tavora
Roger Thomas
Ann Tobe
Lee Tutt
Kenneth Upham
Colleen Upholt
Carol Van Der Karr
Gordon Van Houtte
Margaret Van Houtte
John VanderVer
David Varriuchio
Victor Vere
Gary Vorwalt
Donald Wagner
Cal Warren
Ronald West
Bruce Wiley
Anthony Williams
Bruce Woodward
Paul Zell
Francis Zimmer
Patricia Zack
Student/Senior
Marvin Allendam
Lorraine Arnold
Christopher Aucoin
Louise Barr
Joseph Bernier
Judith Ruth Bloom
Martin Borgo
Jamie Boyle
Calvin Brainard
Peter Breblosch
Margot Brinn
Don Brion
Maria Brion
Richard E. Byrd
Don Cerno
James Chaplin
Ludivak Chobot
Evan Conley
Robert B. Corretore
Suezan Cotton
Gary McNeil
Eleanor Merrifield
David Miller
David S. Morey
Ron Mroz
Connie Myers
Ray Ogleby
Kenneth
Richard Fielding
Picot Floyd
Roscha Folger
Virginia Friedman
Gisele Gall
Brian F. Glenister
Nancy Goldberg
Carolyn Grigorek
Bruce Hall
William Hamlin
Julia Hardin
Paul Harm
Kathryn B. Heaton
Kent Hewett
Donald Hoskins
Jean Houghton
Dorothy Jenks
Judith Johnson
Linus Johnson
Marguerite Johnson
Thomas Johnston
Lawrence Turchin
Virginia Uttermahlen
Lovelace
Janet Van Eet
Anthony Verci
Patrick D’Wall
Heather Wall
Ronald Wiilson
Ruth Windmiller
Dorothy Zimmer
William J. Zinsmister

Agency
Cayuga Addiction
Recovery
Cornell Cooperative
Extension
Day Care and Child
Development
Council of
Tompkins County
Gen & Mineral
Society of Syracuse
Hornell Area
Concern for Youth
Ithaca Youth Bureau
Lakeside Nursing
and Rehab Center
Lansing Residential
Center
Seneca-Cayuga ABC
TST-Boces Even Start
Yates ARC
Youth Advocate
Programs

Ami Singer
Thomas Smith
Neil Searcy
Philip David Stillman
John Strong
Elliot Taffe
David Thompson
Lawrence Turchin
Virginia Uttermahlen
Lovelace
Janet Van Eet
Anthony Verci
Patrick D’Wall
Heather Wall
Ronald Wiilson
Ruth Windmiller
Dorothy Zimmer
William J. Zinsmister

PRI Board of Trustees

Rodney Feldmann
President

1224.0x792.0
02
One of the great joys of my job is hearing from people who, having visited PRI’s Museum of the Earth for the first time, say something like “I thought you were just a rock and dinosaur place, but there’s so much more!” Such statements prove that PRI is making a small contribution toward solving a widespread and ironic problem. Earth scientists like to consider themselves part of the widest and most applicable discipline. Their field, after all, includes the literal world, from oceanography to seismology, from volcanology to the search for oil, from the study of groundwater to the study of the atmosphere. And, of course, it includes paleontology—the study of the history of life—and paleontology includes consideration of essentially all of biology, everything from genetics to ecology—and especially evolution.

Yet the public’s perception of Earth science in general, and paleontology in particular, is frequently just the opposite of this expansive view. Earth science in middle and high school is still too often presented as a memorization exercise. College students, if they encounter it at all, think of it as “Rocks for Jocks.” Outside of school, dinosaurs and rocks are, for most people, kid stuff.

We live in an age of limits, in which we cannot do everything and must choose carefully where we invest our time and resources. PRI is indeed a local, regional, national, and international resource.

This message is more important now than ever, for even—perhaps especially—in these difficult times, when so many are worried about financial survival, adequate understanding of the Earth is essential. There can be no long-term economic security without adequate scientific literacy, and solutions to many of the most urgent economic problems we face—from clean water to energy to climate change—depend on such understanding.

One of the great joys of my job is hearing from people who, having visited PRI’s Museum of the Earth for the first time, say something like “I thought you were just a rock and dinosaur place, but there’s so much more!” Such statements prove that PRI is making a small contribution toward solving a widespread and ironic problem. Earth scientists like to consider themselves part of the widest and most applicable discipline. Their field, after all, includes the literal world, from oceanography to seismology, from volcanology to the search for oil, from the study of groundwater to the study of the atmosphere. And, of course, it includes paleontology—the study of the history of life—and paleontology includes consideration of essentially all of biology, everything from genetics to ecology—and especially evolution.

Yet the public’s perception of Earth science in general, and paleontology in particular, is frequently just the opposite of this expansive view. Earth science in middle and high school is still too often presented as a memorization exercise. College students, if they encounter it at all, think of it as “Rocks for Jocks.” Outside of school, dinosaurs and rocks are, for most people, kid stuff.

We live in an age of limits, in which we cannot do everything and must choose carefully where we invest our time and resources. PRI is indeed a local, regional, national, and international resource.

One of the great joys of my job is hearing from people who, having visited PRI’s Museum of the Earth for the first time, say something like “I thought you were just a rock and dinosaur place, but there’s so much more!” Such statements prove that PRI is making a small contribution toward solving a widespread and ironic problem. Earth scientists like to consider themselves part of the widest and most applicable discipline. Their field, after all, includes the literal world, from oceanography to seismology, from volcanology to the search for oil, from the study of groundwater to the study of the atmosphere. And, of course, it includes paleontology—the study of the history of life—and paleontology includes consideration of essentially all of biology, everything from genetics to ecology—and especially evolution.

Yet the public’s perception of Earth science in general, and paleontology in particular, is frequently just the opposite of this expansive view. Earth science in middle and high school is still too often presented as a memorization exercise. College students, if they encounter it at all, think of it as “Rocks for Jocks.” Outside of school, dinosaurs and rocks are, for most people, kid stuff.

We live in an age of limits, in which we cannot do everything and must choose carefully where we invest our time and resources. PRI is indeed a local, regional, national, and international resource.

One of the great joys of my job is hearing from people who, having visited PRI’s Museum of the Earth for the first time, say something like “I thought you were just a rock and dinosaur place, but there’s so much more!” Such statements prove that PRI is making a small contribution toward solving a widespread and ironic problem. Earth scientists like to consider themselves part of the widest and most applicable discipline. Their field, after all, includes the literal world, from oceanography to seismology, from volcanology to the search for oil, from the study of groundwater to the study of the atmosphere. And, of course, it includes paleontology—the study of the history of life—and paleontology includes consideration of essentially all of biology, everything from genetics to ecology—and especially evolution.

Yet the public’s perception of Earth science in general, and paleontology in particular, is frequently just the opposite of this expansive view. Earth science in middle and high school is still too often presented as a memorization exercise. College students, if they encounter it at all, think of it as “Rocks for Jocks.” Outside of school, dinosaurs and rocks are, for most people, kid stuff.

We live in an age of limits, in which we cannot do everything and must choose carefully where we invest our time and resources. PRI is indeed a local, regional, national, and international resource.
The Paleontological Research Institution was in part originally conceived as a place for scientists and students to conduct original research. As such, its collections and library are essential, world-class resources that attract numerous visitors every year. Today, PRI is home to more Ph.D. scientists and two formally affiliated Ph.D. graduate students out of Cornell University. We continue to build on our resources and the research and have seen good success in 2008-2009 in acquiring external funding in support of staff research projects. Following are some of the active research projects involving PRI staff members.

**Dr. Warren Allmon**’s ([Director] major research interest is the ecology of the origin and maintenance of biological diversity and the application of the geological record to the study of these problems. He is particularly interested in the systematics, evolution, and paleontological viewpoints; Mikkelsen is part of the research on the patterns of origination and extinction in the last 100 million years, and the environmental and ecological contents of these patterns. Most recently, Allmon has been working on the patterns and processes of evolution in fossil gastropods from Paleozoic and Cenozoic (65-3.5 million years-old) rocks in the U.S. Gulf and Atlantic coastal plains.

**Dr. Paula Mikkelsen** (Associate Director for Science and Director of Publications) is a marine biologist and malacologist interested in the diversity, anatomy, and evolution of living and extinct mollusks. Following publication of her successful book SeaShells of Southern Florida: Bivalves (Princeton University Press) in Fall 2008, she and co-author Rüdiger Bieder (The Field Museum, Chicago) are actively writing the gastropod companion volume similarly based on their field research in the Florida Keys. Mikkelsen is also principle investigator on a National Science Foundation grant to study the evolution of bivalves in collaboration with scientists at The Field Museum, Harvard University, and other international institutions. The PRI-based part of “Bivalves: The Tree of Life, www.bivalve.org” will produce a traveling exhibit, teacher development resources, and an undergraduate course, all aimed at teaching the principles of evolution using familiar, invertebrate, edible clams as model organisms. Complementing BivalveTree is a new 3-year NSF-grant called BYTS (Bivalves in Time and Space) that will look closely at the evolution of two large clades of marine bivalves, from molecular, morphological, and paleontological viewpoints. Mikkelsen is part of the morphological team on this grant.

**Dr. Gregory Dietl**’s (Director of Collections) research approach is at the interface between ecology and evolutionary paleontology, integrating research across diverse fields of organismal biology. He focuses on the evolution of ecological interactions using the molluscan fossil record of the last few million years due to its unrivaled preservation and diversity, and because the biology of fossil species this age is reasonably well understood. His research activities this past year included two research trips to Florida supported by an NSF EAR grant to study the effects of a regional Plio–Pleistocene mass extinction event in the western Atlantic on the ecology and evolution of benthic gastropods. He also traveled to conduct field work in the Florceo Arqueoguarte Formation in Veracruz, Mexico, for clues to understanding the dynamics of the recovery of Florida’s benthic fauna following an end-Pliocene extinction event. He also co-organized and led, in collaboration with Dr. Patricia Kelley (University of North Carolina, Wilmington), the second year (of three) of an NSF-Research Experiences for Undergraduates Program in Biodiversity Conservation. He also was invited to participate in the Paleontological Society’s Centennial Short Course on research questions driving paleontology at the start of a new century at the Annual Geological Society of America Meeting in Houston, Texas.

**Dr. Judith Nagel-Myers** (Collection Manager) ongoing research on Paleozoic bivalves produced two systematic reviews of major groups of Late Devonian bivalves. Furthermore, she compiled pioneering information on the morphology, phylogeny, paleocology, and biostatigraphy of these mid-Paleozoic mollusks. Nagel-Myers started a new project in collaboration with Dr. Gregory Dietl (PRI) and Carl Brett (University of Cincinnati) focusing on predation in mid-Paleozoic bivalves, in which she focuses on predator-induced shell damage. Data on durophagous (shell-breaking) predation found in Paleozoic bivalve associations provides a new and exciting perspective on the mid-Paleozoic Marine Revolution. Bivalves are an untapped resource to provide information on the influence of predation in early benthic communities.

**Ursla Smith** (Ph.D. student, Cornell University) is a paleobiologist graduate student in Cornell’s Department of Earth and Atmospheric Sciences. Her research focuses on macronvolutional patterns of thrurrnatic gastropods of New Zealand for which she has been developing new methodologies for incorporating continuous character data into phylogenetic analysis. This year, Ursula was invited to participate in a prestigious model Short Course as a follow-up to a large research grant she obtained from the company in 2008. She presented two papers at the American Malacological Society of America’s Annual Meeting held in Ithaca, one of which is an ongoing collaboration between PRI staff and students and staff at the Smithsonian Tropical Research Institute. She also presented at PRI’s third Annual Summer Symposium and will be attending the Geological Society of America’s Annual meeting in Houston, Texas, to present her Ph.D. research.

**Mary Kosloski** (Ph.D. student, Cornell University) is studying morphological evolution in the Lightning Whelk (Buccinidae caricae), a...
COLLECTIONS

The 2008-2009 fiscal year saw significant progress in specimen curation, making PRI’s research collections—which at about 2.3 million specimens are among the largest in the United States—more accessible to researchers, students, and educators. This success is due in large part to the ongoing efforts of PRI’s collections staff—Dr. Gregory Dietl, Director of Collections, and Dr. Judith Nagel-Myers, Collections Manager—and the hard work of a dedicated group of volunteers and student interns.

Over the last fiscal year, with the completion of the three-year National Science Foundation-funded project to computerize and physically curate the PRI Type and Figured Collection—one of the ten largest vertebrate paleontology collections of type specimens in the nation—the process of curatorial integration of the Cornell University Malacology Collection began. This project will make the important Wesley Newcomb collection, with its extensive collection of land snails from Pacific islands collected between 1845 and 1866, more available to the research and educational communities.

The trend of increasing scientific use of PRI’s collections that began in 2007 continued in the past year. The number of scientific specimen loans in 2008 was the highest (46) in PRI’s history. The average number of loans (39) for 2007 and 2008 is nearly four times the average (10) for 2004-2006, and the first half of 2009 is on track to match or exceed this level of usage. Thirty-six professional and student researchers from around the U.S. also visited the collections in the 2008 calendar year, with 2009 numbers on target to match this level of activity. PRI’s collections were also cited in 15 professional and student publications appearing in the 2008 calendar year—a level that is equal or greater than reported use at several much larger peer institutions.

The PRI collections continued to grow throughout the year. A major highlight was the donation of the collection of Dr. William Zinsmeister from Purdue University, which contains approximately 5,510 lots (ca 22,000 specimens) of Cretaceous-Eocene fossil mollusks from Seymour Island, Antarctica, and vicinity, including bulk samples from measured Cretaceous-Tertiary (K-T) boundary sections. The collection was assembled over more than four decades by Dr. Zinsmeister and is widely recognized as among the largest and finest in the world from this region. The collection also contains important material collected on the Princeton University expeditions to Patagonia in 1898-1899, including a number of type specimens.
The following individuals volunteered during the 2008-2009 fiscal year:

**Volunteers**

Throughout the 2008-2009 fiscal year, our volunteers donated more than 8,000 hours of their time to PRI and the Museum of the Earth. Volunteers contribute to the organization by working with our collections, education, development, exhibits, publications, and operations staff on a regular basis. They give their time generously and in a variety of ways, including graphic design, creating education programs and brochures, evaluating and developing temporary exhibits, interacting with Museum visitors, identifying and cataloging fossils, helping with our membership mailings, taking care of our many unique plants, and reorganizing our library. We are extremely grateful for the contributions that these volunteers have made to our institution. Thank you, volunteers, for everything you do for us! The following individuals volunteered regularly during the 2008-2009 fiscal year:

- Elizabeth Altier
- Maria Altier
- Teal Arcandi
- Darlene Armstrong
- Curt Banta
- Sarah Berry
- Maureen Bidley
- Janice Brown
- David Brown
- Al Burkhardt
- Dick Burlew
- Peg Burlew
- Quinn Chapman
- Pat Charwat
- Jenny Cleland
- Andrew Cliff
- Mafa Cappolino
- Jordan Decker

- Brian Dennison
- Barbara Dimock
- lenore Durkee
- Vern Durkee
- Alexis Erwin
- Eniko Farkas
- Jeremy Gardner
- walter Gates
- Michael Grenier
- Betty Harris
- Barth Headlip
- Graham Headlip
- George Hebbien
- Ian Hillburger
- Adrianna Hirler
- Jean Houghton
- John Hultberg
- Mickie Sanders-Jaquet
- Bill Kloze
- Mary Kozlowski
- Frank Kozlowski
- Ben Landes

- Curt Lindy
- Lauren Maistros
- Mike Mariano III
- DeShawn McBride
- Phyllis McNeill
- Zach Montaghe
- Erica Morgan
- Elizabeth Munson
- Lamar Parsons
- Lani Perez-Bradley
- Carlie Pittsch
- Carl Potter
- Jeff Readon
- Olivia Reber
- Marciana Rhodes
- Paul Rice
- Curtis Roddy
- Kelly Rowland
- Erica Soma
- Aurora Solla
- Leah Solla
- Ursula Smith
- Sam Strait
- Adam Tagliamonte
- Josh Tashman
- Keenan Taylor
- James Tier
- Petra Tremblay
- Tom Vighottza
- Steven Wallace
- Cathy Whalen
- Marcus Whalen
- Don Wilson
- Joseph Zappala
- Jane Zimmer
- Dorothy Zimmer

We work with a number of agencies within the community. The Ithaca community provides excellent resources to local non-profit organizations. Thank you for your efforts and contributions to our organization!

**Development**

- Development Committee, Fiscal Year 2008-2009:
  - Percy Browning, Chair
  - Dave Flinn
  - Howard Hartnett
  - Jennifer Liber Raines
  - David & Marias Taube

The past fiscal year has been exceptional in many ways. With economic uncertainty came a number of difficult decisions to be made in our households, not the least of which dealt with how to continue supporting those causes and institutions that we hold most dear in the face of tighter personal budgets. Many institutions were forced to grapple with the problem of how to continue to operate in the midst of declining giving.

At PRI, ours was a conscious decision to not pull back on the educational programming, exhibits, research, and publications that have helped PRI gain a foothold in laboratories, classrooms, and households throughout Central New York and beyond. In the year covered by this report, PRI’s friends and supporters provided over $1.1 Million in support of the Institution. Far from simply allowing us to continue keeping the lights on and operating a scaled-down version of a natural-history museum, our supporters met the challenge and found a way to continue providing PRI the means to do what it does best—inspire, exhibit, and educate.

To all of our supporters:
For everything you have done to help PRI continue leading the way in Earth sciences education, thank you!
PRI makes the history of the Earth and its life accessible to audiences of all ages and background.

We...

- put people in contact, literally, with the stuff of the Earth—rocks, fossils, landscapes.
- help people understand how scientists study the past and make predictions about the future. We help people ask questions, and to seek answers themselves.
- make the Earth’s history accessible to all audiences, including underserved communities, through our Earth 101 Education Program. Everyone can have a role in science and the study of the Earth.
- help people understand that the history of the Earth and its life is global change on the largest scale. Our Global Change Education Project helps people understand the science behind climate change and the loss of biodiversity.
- show that the history of life tells the story of biological evolution. Our Evolution Education Project helps people understand what evolution is, what it’s not, and the science behind it.

EDUCATION | PUBLICATIONS & PRESENTATIONS


EDUCATION | INTRODUCTION
EDUCATION | KIDS DISCOVER THE TRAIL!

Kids Discover the Trail! program, a partnership between Ithaca’s Discovery Trail and the Ithaca Public Education Initiative, includes student visits to a Discovery Trail institution, like the Museum of the Earth or the Tompkins County Public Library, where they receive instruction from the museum or library educator. In addition to the special curricular programming that is planned to suit the grade level state standards, learning experiences also have a social component. Visits to Discovery Trail sites are made by two classrooms from different elementary schools at the same time. The goal is that students get to know those from different geographic and cultural parts of our district so when they meet in middle school, there is more understanding, respect and connection. In the fourth year of the program, over 2,500 students participated. At the Museum of the Earth, first grade classes visit and participate in a Dinosaur Science program led by a Museum educator. Before coming to the museum, the children are met by a Museum educator visiting each of the classes for a pre-visit to get them acquainted with the Museum as well as to receive a copy of an age appropriate dinosaur book. By further establishing the link between the Museum and classroom, we are providing students with a more comprehensive and engaging learning experience that will create lasting memories and make science fun for learners of all ages.

EDUCATION | GRANT FUNDING

National Science Foundation
Discovery Research K-12

National Science Foundation
Discovery Research K-12

National Science Foundation


National Science Foundation


National Science Foundation

National Science Foundation

National Science Foundation
Geosciences Division (FY2008): Traveling exhibit and teacher professional development on evolution of maize, associated with maize genetics research, DBI 0836018 $110,000 (PI: Ed Buckler of Cornell University).

National Science Foundation

National Science Foundation
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, with a significant portion of our outreach being nationally relevant.

Among our most nationally relevant programs, PRI is involved in:

- Teacher professional development such as the publication of our Teacher Friendly Guides on regional geology, encouraging Earth science teachers to use the local environment as a primary teaching tool for all regions of the country;

- Leading the charge in informal Earth science education by training museum docents on how to most effectively teach evolution to a wide range of audiences, by offering graduate-level courses for informal Earth science educators from around the world, and creating a central website for resources at www.informalearthscience.org;

- Collaborating with nationally recognized institutions like Cornell University, the Denver Museum of Nature and Science, the Field Museum, and Harvard University Museum of Comparative Zoology on a variety of education initiatives, many of which are funded by the National Science Foundation;

- 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 Fieldwork Experiences,” and research partnerships with students and teachers;

- Focusing on major issues in science education through our Global Climate Change project and our Evolution Education project, sharing best practices with formal and informal educators from across the United States and beyond;

- Bringing Earth science to all by reaching under served 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 and research on “Big Ideas” in Earth science. PRI hosted the Coalition for Earth System Education meeting, which focused on Earth System Literacy in fall 2008.

<table>
<thead>
<tr>
<th>LOCAL</th>
<th>STATE</th>
<th>NATIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Permanent and temporary exhibits at the Museum of the Earth</td>
<td>- Earth science teacher workshops</td>
<td>- Fossil Finders</td>
</tr>
<tr>
<td>- School and community group presentations</td>
<td>- New York State Fair outreach education with 4-H</td>
<td>- Climate Change in Your Backyard program</td>
</tr>
<tr>
<td>- Girl Scout and Boy Scout workshops</td>
<td>- Earthquake education programs</td>
<td>- Teacher-friendly Guides to Geology</td>
</tr>
<tr>
<td>- Teacher Resource Day</td>
<td>- 4-H climate change curriculum development</td>
<td>- Virtual Field Experiences</td>
</tr>
<tr>
<td>- Cornell University and Ithaca College students use of the Museum and collections</td>
<td>- Talks on climate change to community groups throughout the state</td>
<td>- Earth System Science Informal Education Network</td>
</tr>
<tr>
<td></td>
<td>- Teacher workshops</td>
<td>- Mastodon Matrix project</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Earth science education reform initiatives</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EARTH 101</th>
<th>CLIMATE CHANGE EDUCATION</th>
<th>EVOLUTION EDUCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Climate change exhibits</td>
<td>- Exhibits and Museum tours on evolution and the history of life</td>
</tr>
<tr>
<td></td>
<td>- Earth Day activities</td>
<td>- Darwin Days celebration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Museum docent training</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Teacher workshops and curriculum materials</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Fossil Finders</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Evolution &amp; Creationism guide for museum docents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Teacher-Friendly Guide to teaching evolution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Traveling exhibit and teacher kit on bivalve evolution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Traveling exhibit and Teacher-Friendly Guide on maize evolution</td>
</tr>
</tbody>
</table>

EDUCATION | NATIONAL RELEVANCE
EDUCATION | OVERVIEW
A basic understanding of the history of the Earth, its life, and the science by which we study it plays a vital role in shaping an informed public ready to tackle the next set of global challenges. These Earth science basics—what we call Earth 101—are at the core of our educational outreach mission and many of PRI’s education programming and exhibits.

Temporary Art Exhibitions

**Rover Landings:**

*Cornell on Mars* (September 9–December 9, 2008)
In the Mastodon Reflective Area, we featured a special exhibition of images from two Mars Rover missions. Cornell Mars Rover team members chose the images on display for their scientific significance and their artistic power.

**Sculpting Human History**

(October 1, 2008–August 1, 2009)
PRI’s Artist-in-Residence, paleoartist John Gurche, had a major commission to create a series of life-sized bronze sculptures of ancient hominins for the Smithsonian Institution’s National Museum of Natural History. John set up a working studio in the lobby of the Museum, where visitors could watch the process of creating the clay models for these sculptures. The studio was a fantastic opportunity to explore human evolution and showcase the science/art relationship.

**Barbara Page Water Colors**

(October 4, 2008–January 18, 2009)
A series of watercolors by local artist Barbara Page featured specimens of petrified wood from PRI’s permanent collection. The exhibition complemented our fall exhibition “Missing the Forest for the Trees: Exploring the Beauty of Petrified Wood.”

**Wood Sculpture by June Szabo**

(June 20–September 20, 2009)
Local Artist June Szabo’s work was displayed in the Borg Warner and Education Gallery. The show featured three-dimensional representations of landscapes and complemented the summer’s temporary exhibition “A Forest Journey.” According to the artist, “We are bound and interwoven into the living process of the Earth. Inexplicably, we are intertwined and unable to escape those connections any more than we can escape breathing air. Art is my way of examining our relationship to nature; to the Earth and to each other.”

New Temporary Off-Site Exhibition

**Day Hall Exhibit:**

March 1, 2009–July 1, 2009
A small off-site exhibition in Day Hall just outside of Cornell University President David Skorton’s office featured eight fabulous fossils from PRI’s collections. The fossils included modern and fossil nautiloids, and a range of impressive ammonoids.

The fossils complemented reprints of fossils from Barbara Page’s Rock of Ages Sands of Time mural on permanent display at Museum of the Earth and text developed to highlight the “Charles Darwin: After the Origin” exhibition on display at Museum of the Earth and the Carl A. Krogh Library on Cornell University’s campus.
visitors, and a computer with NASAs revision of a large dinosaur magnet for children playing on the floor, the board, addition of drawing stations, during the past year, with an of DinoLab was nearly completed (October 4, 2008--January 18, 2009).

Discovery Lab Renovations
The NSF-supported rehabilitation of DinoLab was nearly completed during the past year, with an addition of comfortable cushions for children playing on the floor, the revision of a large dinosaur magnet board, addition of drawing stations, repositioning of dinosaur sculptures to make them easier to interpret for visitors, and a computer with NASA World Wind showing the global positioning of continents in geologic history.

Borg Warner Gallery
Temporary Exhibitions

Missing the Forest for the Trees: Exploring the Beauty of Petrified Wood
(October 4, 2008--January 18, 2009)
During the fall of 2008 we invited visitors to celebrate the changing of the seasons with a journey to a different kind of forest, one where the trees were no longer living, but where they were just as colorful! Our fall exhibition was designed and developed in-house, featuring

world class specimens from our outstanding petrified wood collection. The exhibition focused on the beauty of petrified wood and also included a collection of watercolors by local artist Barbara Page.

Charles Darwin: After the Origin
(February 2–June 11, 2009)
In celebration of the 200th birthday of Charles Darwin and the 150th anniversary of the publication of On the Origin of Species, Museum of the Earth and the Division of Rare and Manuscript Collections at Cornell's Kroch Library developed this collaborative exhibition. Under the guidance of guest curator and Darwinian scholar, Dr. Sheila Ann Dean, both venues explored Charles Darwin's life and work in the twenty-two years following the publication of On the Origin of Species in 1859. The text for both parts of the exhibition was drawn from the writing of Sheila Dean, whose book of the same title was edited and published by PRI.

A Forest Journey
(June 20–September 20, 2009)
This exhibit, designed and developed by the Franklin Institute Science Museum, was our 2009 summer exhibition. The hands-on exhibition, based on the book A Forest Journey by John Perlin, offered a look at the science behind the trees and about our relationships (past, present, and future) with our forests.

Global climate change remains at the forefront of current environmental concerns, and is one of the central points of focus of PRI's informal Earth science education efforts. The Global Change Project at PRI has been working to promote educational outreach on climate change, energy and sustainability, biodiversity loss, and other related issues.

The Global Change Project currently consists of a comprehensive website, found at www.priweb.org/globalchange, as well as:

- Museum exhibits on climate change, climate throughout geologic time, the 6th mass extinction, and alternative energy sources
- Outreach, as part of a collaborative NSF-funded project with New York State 4-H and the Community Collaborative Rain, Hail, and Snow Network (CoCoRaHS). Youth monitor and record precipitation data, and use that data as a catalyst for understanding weather, climate, and the effects of a changing climate on ecosystems. The curriculum associated with the project is being piloted by 4-H educators throughout NY and activities within the curriculum have been chosen to become one in a series of 4-H Science Toolkits, which highlight science education,
- A blog called Climate Change 101, which features daily posts reflecting on current news and offers tips for living a low carbon footprint/sustainable lifestyle,
- A monthly mailing list that highlights important news in climate change research and education, as well as what PRI is doing locally,
- A monthly published article in the Ithaca Journal on Earth Science topics of interest to the public, many involving topics relevant to climate change education,
- Climate change education to rural communities of Tompkins County, surveying the needs of different communities throughout Tompkins County and New York State.

The Global Change Project is also a part of the outreach education arm of the Tompkins County Climate Protection Initiative, a consortium of local businesses, government, educational institutions, and not-for-profits dedicated to improving energy efficiency in and around Ithaca.
The evolution of life is a central unifying principle of modern science, and it is integrally connected to our understanding of how Earth systems work and evolve. Through our vast collection of specimens, our museum facility, and our outreach programs, PRI encourages and facilitates improved public understanding of what evolution is, and how scientists study it. PRI’s Evolution Project includes some of these very popular events, outreach activities, and publications:

- PRI co-hosted a weeklong Darwin Days celebration, commemorating the 200th birthday of Charles Darwin and the 150th anniversary of the publication of *On the Origin of Species*. This marks the 4th annual Darwin Days celebration co-hosted by PRI and Cornell University, with record attendance of numerous talks, panel discussions, and activities.
- As a part of this year’s Darwin Days celebration, the gallery space in the Museum of the Earth was home to an exhibit called “Charles Darwin: After the Origin” which highlighted many of Darwin’s research interests after his publication *On the Origin of Species*. This exhibit was shared between the Museum of the Earth and Cornell University’s Krogh Library.
- PRI staff continue to work with the Field Museum and Harvard University on a five-year National Science Foundation-funded ‘Assembling the Tree of Life’ grant to develop the evolutionary tree of clams (bivalves). Outreach for this project includes a traveling exhibit, ‘Evolution on the Half Shell,’ a website, and a Teacher-Friendly Guide To Evolution.
- PRI, partnering with Cornell University Department of Education, has completed the first year of the four-year NSF-funded grant, Fossil Finders, which sends Devonian fossil samples out to classrooms to teach the nature of science and science inquiry. This past year, we brought ten teachers from across New York State to Ithaca for a week-long immersion in Devonian fossils and innovative teaching techniques.
- The Museum of the Earth is visited by college and university students who use the Museum of the Earth exhibits to better understand evolution and the history of life through time.
- PRI displayed artist-in-residence, and noted paleoartist, John Gurche’s progress on early hominid sculptures throughout the year in the entry of the Museum of the Earth. John also gave several lectures throughout the year about his work and the evolution of humans.

In an effort to address the need for quality Earth system science professional development for the thousands of informal venues across the United States, PRI has developed an online, ten-week, one-credit graduate-level course for museum and science center educators. The course, entitled “Global Climate Change and Informal Earth System Science,” is supported by a grant from the Earth System Science Education Alliance (ESSEA), an NSF/NASA-funded organization that supports educational institutions across the country by offering a series of online Earth system science courses for K-12 teachers. This course represents ESSEA’s first professional development for informal educators in the U.S., and includes two modules, “Global Climate Change” and “Earth System Science in Your Backyard.”

Participants in the course develop a Virtual Fieldwork Experience (VFE) program. Examples of VFEs by 2007 participants include: “Baltimore’s Inner Harbor,” “Urban Sprawl and the Loss of Backyard Trees,” and “Lake of Fire: Methane Emissions from Canoe Lake, Alaska.”
The Fossil Finders project, in collaboration with Cornell’s Department of Education, engages students in classrooms across the country in an authentic investigation of central New York Devonian fossils in an attempt to answer the question: ‘Did the organisms in the shallow Devonian sea stay the same during times of environmental change?’ The project develops curriculum and resources, as well as an interactive website, for upper elementary and middle level students and their teachers. Fossil Finders emphasizes learning about evolutionary concepts through an authentic, inquiry-based investigation of rocks and fossils. Ten middle school teachers from across New York State participated in the project. Teachers visited several outcrops in upstate New York, and learned to collect, identify, and measure local fossils. Evaluation comments from teachers included “The fieldwork helped to connect the information and make it more concrete,” and “I would have never thought that learning about fossils could be so much fun!” Find out more at www.fossilfinders.org.

The following groups participated in programs or tours at Museum of the Earth during fiscal year 2008-2009:

- ADT American Astronomical Society
- American Mineralogical Society
- Apachin Elementary
- ASSE International Student Exchange Program
- Belle Sherman Elementary
- Ben Franklin Elementary
- Beverly J. Martin Elementary
- Beverly J. Martin Elementary
- Lego League
- Blue Ridge Middle School
- BOCES Earth Science Teachers
- BOCES ESL
- Boy Scouts
- Bright Horizons
- Candor Elementary
- Cass Park Summer Camp
- Cayuga Addiction Recovery Services
- Cayuga Heights Elementary
- Chapin School
- Charles D. Dewey Middle School
- Chemung Valley Montessori
- Chenango Cooperative Extension
- Chenango Forks High School
- Clark Forks Middle School
- Coalition for Earth Science Education
- Coddington Road
- Community Center
- Cornell Adult University
- Cornell Adult University
- Youth Program
- Cornell Anthropology Department
- Corning Elementary
- Cub Scouts
- DeWitt Community Library
- DeWitt Middle School
- Dryden Elementary
- Dryden High School
- Dryden Middle School
- Dundee Summer Camp
- Elderhostel
- Elizabeth Ann Crane
- Montessori School
- Elmira College
- Enfield Elementary
- Fall Creek Elementary
- Fayetteville Science Olympiad
- Fingerlakes Montessori School
- George Jr. Republic
- Girl Scouts
- Greater Ithaca Activities Center
- Guild of Natural Science Illustrators
- Harpursville Central School
- Homer Brink Elementary
- Hornell Concern for Youth
- Integrative Montessori School
- Ithaca College
- Ithaca Youth Bureau
- Kendal at Ithaca
- Lifelong
- Lincoln Street Elementary
- Longview
- Main Street Elementary
- Maine Endwell Science Olympiad
- Marathon High School
- Mineral Society of NE Pennsylvania
- National Science Teachers Association
- New York Dairy Farmers
- Newfield Elementary
- Northeast Elementary
- Northside Beldracket Middle School
- Onondaga County 4H
- Onondaga Community College
- Onondaga Cortland Madison BOCES
- Ontario 4H
- Orange County 4H
- Orange County
- Community College
- Orange County
- Cooperative Extension
- Oswego Elementary
- Paryi Cohoes Elementary
- Phoenix High School
- Romulus Central School
- Rosamond Gifford Zoo
- Science Leadership Academy
- Science Olympiad
- Smith Elementary
- Smithsonian Marine Station
- South Hill Elementary
- Spencer Van Etten Middle School
- ST. Lawrence University
- SUNY Cortland
- SUNY New Paltz
- Syracuse Academy of Science
- The New School
- Tompkins Cortland Community College
- Tompkins County Climate Protection Initiative
- Tompkins County Convention and Visitors Bureau
- Trumansburg Middle School
- Tuscara Elementary
- Van Dyke Addiction Treatment Center
- Vestal Glenwood Elementary
- Watkins Glen Afterschool
- Watkins Glen High School
- Zion School
Empowering educators with the latest scientific theories and research—as well as the best practices for presenting that research in the classroom—is a primary mission of PRI outreach. Scientific literacy is increasingly important in today’s society, and there is no better way to reach large numbers of students than to reach their teachers. PRI facilitates a series of programs dedicated to bringing real science to teachers in New York and across the nation. In this role, PRI is actively engaged in the careful study of their local Earth system science with an eye toward field-based inquiry for their students. The creation and use of VFEs is being incorporated into a range of PRI’s outreach activities.

Teaching Earth science in the field—beyond classroom walls—is not only very effective, but also necessary in order for students to properly understand our planet and the forces that shape it. The national series of regional Teacher-Friendly Guides is a curriculum supplement that provides teachers with the content and background to introduce local Earth system science to their students, increasing the relevance of Earth science in their lives. The Northeast and Southeast Guides are complete, the South Central Guide is nearing completion, and the Western, Midwestern, Rocky Mountain, and Southwest guides will be completed in the coming years. Go to teacherfriendlyguide.org to use these resources.

Virtual fieldwork experiences (VFEs) are virtual re-creations of geologic field sites that allow students to do real science at a distance; VFEs bring the field into the classroom. By creating VFEs, teachers are not only collaboratively building rich curriculum resources, they are also engaged in the careful study of their local Earth system science with an eye toward field-based inquiry for their students. To get input from master teachers as we develop these approaches and resources, and to train teachers to use them effectively, we began working with teachers from around the south central region. We will ultimately involve teachers from every region of the country. See www.virtualfieldwork.org for more information.

Teaching Earth science in the field—beyond classroom walls—is not only very effective, but also necessary in order for students to properly understand our planet and the forces that shape it. The national series of regional Teacher-Friendly Guides is a curriculum supplement that provides teachers with the content and background to introduce local Earth system science to their students, increasing the relevance of Earth science in their lives. The Northeast and Southeast Guides are complete, the South Central Guide is nearing completion, and the Western, Midwestern, Rocky Mountain, and Southwest guides will be completed in the coming years. Go to teacherfriendlyguide.org to use these resources.

Virtual fieldwork experiences (VFEs) are virtual re-creations of geologic field sites that allow students to do real science at a distance; VFEs bring the field into the classroom. By creating VFEs, teachers are not only collaboratively building rich curriculum resources, they are also engaged in the careful study of their local Earth system science with an eye toward field-based inquiry for their students. To get input from master teachers as we develop these approaches and resources, and to train teachers to use them effectively, we began working with teachers from around the south central region. We will ultimately involve teachers from every region of the country. See www.virtualfieldwork.org for more information.

Collaboration between PRI and the Cayuga Nature Center, located just a few miles from the PRI campus in Ithaca, began in June 2008 with the arrival of a full-time outreach educator working as liaison between the two organizations. Perhaps the most successful program to come out of the collaboration has been the Summer Day Camp, with campers spending time at both the Nature Center exploring the outdoor world and at the Museum of the Earth learning about the ancient world. Other collaborations include day camps in the fall, winter, and spring, a series of programs entitled "Family Adventures in Nature;" teacher professional development opportunities; and the publication of A Field Guide to the Cayuga Lake Region, by PRI-CNC staff member James Dake.

Collaboration between PRI and the Cayuga Nature Center, located just a few miles from the PRI campus in Ithaca, began in June 2008 with the arrival of a full-time outreach educator working as liaison between the two organizations. Perhaps the most successful program to come out of the collaboration has been the Summer Day Camp, with campers spending time at both the Nature Center exploring the outdoor world and at the Museum of the Earth learning about the ancient world. Other collaborations include day camps in the fall, winter, and spring, a series of programs entitled "Family Adventures in Nature;" teacher professional development opportunities; and the publication of A Field Guide to the Cayuga Lake Region, by PRI-CNC staff member James Dake.

To get input from master teachers as we develop these approaches and resources, and to train teachers to use them effectively, we began working with teachers from around the south central region. We will ultimately involve teachers from every region of the country. See www.virtualfieldwork.org for more information.