

Celebrating Our Past, Embracing Our Future

2007 Annual Report



THE
ACADEMY
OF NATURAL
SCIENCES



From the Chairman of the Board

Dear Friends of the Academy,

As the Academy approaches its 200th anniversary in 2012, we can look back on a year of significant accomplishments. This past February, our President, Dr. William (Bill) Brown, Ph.D., J.D., finished his first full year as the Academy's Chief Executive Officer—one that sets a new standard for this position. We are fortunate indeed to have Bill leading our team, particularly since we are the beneficiaries of his expertise developed during his five successful years heading up the Bishop Museum in Hawaii.

During 2007, with Bill's leadership, the Academy's financial position improved very significantly. In addition, Bill has streamlined the Academy's organizational structure and has measurably increased the visibility of the Academy, both locally and worldwide.

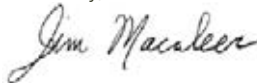
A highlight of 2007 was our celebration of Dr. Ruth Patrick's 100th birthday. Ruth was a pioneer in the field of limnology—the study of freshwater systems—and has received numerous awards, including the National Medal of Science. Ruth still comes into the Academy on an almost daily basis, and we continue to benefit from her advice and counsel.

We are pleased to welcome two new trustees: Ken Warren, an environmental lawyer with more than 25 years of experience, and Kathy Frorer, an accomplished businesswoman, financial expert, and entrepreneur. Their expertise and enthusiasm are great assets for the Academy.

We also thank two outgoing board members for their support of the Academy during their service as trustees: David Ford and Minturn Wright. Minturn has served on our Board and various committees since 1958. We are pleased that both he and David will continue to support the Academy through various committee assignments.

Long-lived organizations like the Academy must constantly reinvent themselves to remain relevant in the 21st century. This is exactly what our trustees, President Bill Brown, and our talented staff are doing. As we approach our 200th anniversary, we fully expect these changes will be readily apparent to our members, our visitors, and the worldwide science community.

Sincerely,



R. James Macaleer

From the President

Dear Friends of the Academy,

The Academy of Natural Sciences turned 195 years old during 2007—a venerable age, even by museum standards. Working in an institution that's been in operation as long as the Academy presents us with an interesting challenge: how do we honor the traditions and accomplishments of the past while at the same time embrace new ideas and techniques that meet today's needs, and prepare for what lies ahead?

In short, what should our nation's oldest natural history museum, founded in the early 19th century, be doing 200 years later? Our vision for the Academy is to be a leader in research and education related to natural history and the environment. During 2007, we've made great strides in developing strategies to make this vision a reality, and have taken key steps that will enable us to implement these strategies.

This past year we upgraded the housing for portions of our vast collection of specimens that are central to the knowledge of biodiversity and to the history of life on this planet, as well as being vital to the Academy's research programs. Recently these research programs have rewritten the story of how fish made the move to land, have reorganized the catfish family tree, and have used DNA analysis to determine the interrelationships among species of plants and animals.

We are answering questions such as: why eels are doing well in the Delaware watershed and not so well elsewhere; how climate change may upset aquatic ecology in this part of the world; and how climate change is wreaking havoc in the permafrost of Mongolia. We have established an Asia Center so that the Academy's expertise on environmental issues can be available throughout this huge and threatened region of the world.

In addition to our research, in 2007 our Education Department hosted over 130,000 students from Philadelphia area schools who participated in various Academy education programs. We celebrated the 25th anniversary of our WINS programs (Women in Natural Science), through which the Academy mentors girls from the School District of Philadelphia who study science and participate in research at the Academy. Most of them go on to college. We renovated exhibits and began planning for sweeping changes throughout all of our public spaces. We also hosted several traveling exhibits that were well received and helped us increase attendance year-over-year by nearly 10%.

We thank our members, donors, and staff for enabling us to move ahead with our vision, and we look forward to your support as fellow travelers on our journey yet to come.

Sincerely,



William Y. Brown



A lot has changed in the 195-year history of the Academy.

We've packed up and moved five times—surely a record of some kind, and one, probably, that other museums are happy to let us hold. We've expanded our scientific holdings from a handful of books and natural history specimens to one of the top ten research collections in the country. And we've evolved from a members-only club of wealthy gentlemen-naturalists to a public institution open to everyone.

In June 2007, the Academy underwent another important change when our Board of Trustees changed the wording of our institutional mission. However, instead of endorsing a newly crafted mission statement, they unanimously re-adopted the Academy's original mission, which had been retired some years earlier.

This mission, crafted by our founders in 1812 and set forth by the Pennsylvania Legislature in 1817, is "the encouragement and cultivation of the sciences." Short, simple, and sincere. By recommitting ourselves to it, we acknowledge that much of our history is just as valid, relevant, and exciting as it ever was.

In addition to adopting this "new-old" mission, our Trustees also gave their support to a strategic plan developed by Academy President William Brown. Over the next five years, it will serve as our road map, and affirms our commitment to doing what it takes to assure that the Academy is vibrant, financially secure, and cutting-edge at its 200th birthday, and positioned to thrive and lead for the next 200 years.



Exploring Our World





Not one of the seven founders of the Academy was a formally trained scientist. But all shared a keen interest in the natural world. They sought out the best and brightest scientists and welcomed them into their fold. Within ten years, the Academy was regarded as the undisputed center for the study of natural sciences in the country.

Today, we have more than 25 Ph.D. scientists conducting research projects all over the world.

Locally, much of our focus is on the Delaware Estuary. In 2007, we pulled on hip waders and tromped through muddy marshes collecting sediment cores. Sediments record the environmental history of the marsh ecosystem—when polluted sediments were deposited and how fertilizers, heavy metals, and other contaminants travel from headwaters to estuary.

Other local projects this past year included long-term

studies of two fishes—the American Eel and the endangered Bridle Shiner—as well as a follow up to an historic 101-year survey of Eastern Pennsylvania Crayfishes.

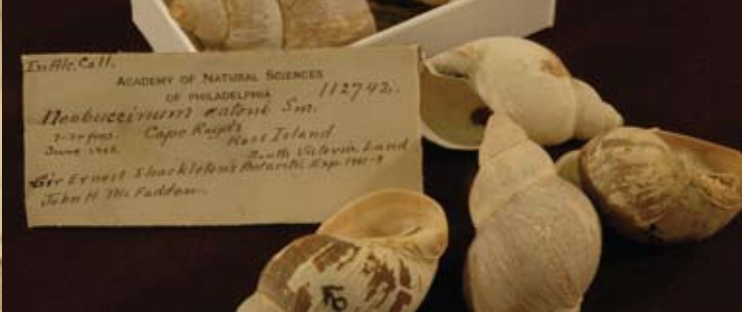
Some of our studies took us farther afield—from Surinam for catfishes to Zambia for clams. Others kept us right here in Philadelphia. The Laboratory of Molecular Systematics and Ecology conducted DNA analysis for eight different research projects, including the completion of a two-year phylogenetic study of Caribbean land snails.

Also in 2007, we laid the groundwork to expand our research activities in Asia. Since the early 20th century we've been sending scientists to Asia, from collecting expeditions to China and Japan to environmental assessments of Mongolian lakes. By building partnerships with sister institutions, we hope to train the scientists of tomorrow in their own backyards.



Safeguarding Our Collections





The Academy of Natural Sciences was born when seven gentlemen-naturalists pooled their personal collections of natural history specimens and books, and formed a 19th-century version of a Meetup Group for promoting their common interests.

Today, the collections are the lifeblood of our institution. Because we've been collecting longer than any other natural history museum in the Americas, we have treasures that make us the envy of many larger institutions. Especially valuable to researchers are our type specimens—more than 100,000 of them, each the standard of reference for identifying its species.

In addition to the more than 17 million specimens held in our research collections, we also have one of the finest natural history libraries in the country. The Ewell Sale Stewart Library houses 200,000 volumes dating from the 16th century to the present, and our archives boast a quarter-million letters, manuscripts, field journals, drawings, paintings, and photographs.

We take seriously our role as protectors of these collections, and since 1812 have maintained an unbroken record of collection and curation. We're committed to constant vigilance, active curation, and rigorous cataloguing.

In 2007, collections care staff focused on physically protecting our specimens, completing a multi-year project that replaced all of the specimen storage cabinets in the Malacology Department. We want our specimens around for at least another few centuries, and physical protection is crucial.

In the years to come, we will continue to make improvements to the care of our irreplaceable objects. We also will design and install new permanent exhibits that will showcase them so that we can share with our visitors the depth and breadth of our magnificent collections.



Sharing Our Passions



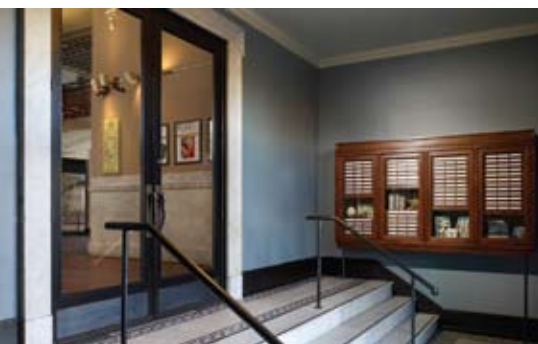


At the Academy, we're passionate about science, and we share that passion every day with our visitors through programs and exhibits that convey the excitement of the natural world. In 1828, we opened the doors of our first museum, but even before that we taught classes, hosted lectures, and led field trips for the public.

Since 1932, when we established a relationship with the School District of Philadelphia, our educators have been making a positive impact on the local community. In 2007, our groundbreaking WINS (Women in Natural Sciences) program celebrated 25 years of providing female public high school students with hands-on science classes and personal growth opportunities in an encouraging environment. We also launched "Wild Weekends," monthly events that celebrate a special science theme through crafts, demonstrations, and lots of hands-on activities.

In October, our front entrance turned into a temporary construction zone. Thanks to a grant from the Pennsylvania Historical and Museum Commission, we renovated our front entranceway, restoring many of its original features (marble mosaic floors) and commissioning new ones (bronze door handles cast from ibis skulls). When visitors walk through our front doors, they know they're entering an extraordinary place.

With an eye on 2012, we've begun plans to renovate our current exhibits and create new ones that highlight the vast collections currently housed behind closed doors. We're also carving out space for a state-of-the-art education center, where students of all ages can engage in a wide variety of hands-on science learning experiences. We never tire of introducing visitors to an extraordinary world of science that they would otherwise miss, and strive to make every encounter memorable.



Strengthening Our Foundation





One of the earliest members of the Academy was also one of our most generous benefactors. William Maclure, a Scotsman with a head for business and a passion for geology, was the driving force behind our early success. Not only did he finance operations, he also served as Academy president for 22 years and donated his personal collection of specimens and books.

Although our fundraising has changed a great deal since those early days, the Academy continues to rely heavily on the annual support of many, including a generous Board of Trustees and a loyal constituency. In 2007, we raised \$1.3 million in unrestricted gifts—exceeding our goal of \$1.2 million.

The Ewell Sale Stewart Library had an especially successful year. In the spring, a special appeal generated more than \$85,000. And in December, the first payment of a \$750,000 pledge from an anonymous donor fulfilled the terms of a matching grant from the Arcadia Foundation for the Archivist Endowment Fund.

Other noteworthy gifts included a bequest from John and Marjorie Foster and significant contributions to the Arrow Founders' Fund. We also broadened and diversified our reach into the community this year,

engaging local leaders from business, nonprofit, and governmental sectors.

November 17th marked the most festive fundraising event of the year, when we held a gala celebrating Dr. Ruth Patrick's 100th birthday. This gala honored Dr. Patrick, who has spent her entire 74-year career at the Academy. With the help of gala chairs Nick DeBenedictis (Chairman, President, and CEO of Aqua America), Irene H. Hannan (Senior Vice President of Citizens Bank), and Judith M. von Seldeneck (Founder, Chairman, and CEO of Diversified Research), we raised more than \$250,000 to support the exciting work of our Academy.

We also created a unique way to publicly recognize our many donors. Just inside our front doors, two monumental "specimen cabinets" contain row upon row of drawers bearing the names of individual, corporate, and organizational supporters.

To realize our ambitious strategic plan, the Academy needs new champions to step forward as well as the full faith of those already committed to the cause. Together, we can build on the past 195 years to create a better understanding of the complex and rapidly changing natural world in which we live.



Our Year-at-a Glance

January 10

The Internet home of the Academy moves to a new, easy-to-remember address: **ansp.org**. As part of the move, the site gets a design makeover, becoming more streamlined and easy to navigate.



January 20

The special exhibit "The Scoop on Poop: The Science of What Animals Leave Behind" opens. Over the course of its four-month run, it draws near-record crowds and a huge media interest. They are, undoubtedly, lured by the compelling subject matter.



February 15

The Academy hosts an important public mayoral forum—it's the first time all five Democratic candidates appear together. In front of an enthusiastic, standing-room-only crowd, the candidates discuss their vision for making Philadelphia "the next great city."

February 26–March 1

Equal parts of enthusiasm and nerves fill the halls of the Academy as it hosts the 28th annual George Washington Carver Science Fair for Philadelphia elementary students.

March 30 & 31

Senior Fellow Robert Peck travels to England to present a paper at the international conference, "Exploring and Being Explored: Africa in the Nineteenth Century." Peck is the only American presenter at the conference.

April 11

Dr. J. Emmett Duffy, noted ecologist at the Virginia Institute of Marine Science, delivers the Cheryl Beth Silverman Memorial Lecture. His talk, "Turning the Tide," presents a sobering account of the world's fisheries and ways to save them from collapse.



June 4

U.S. Senator John Kerry and his wife, Teresa Heinz Kerry, visit the Academy and receive a private tour of the collections and archives.



June 15

Academy president William Brown signs an affidavit in Philadelphia Orphans' Court, thus reaffirming the Academy's commitment to keep and properly care for the William S. Vaux mineral collection. His signature effectively ends an ongoing controversy surrounding the potential sale of this historically important collection.



June 18

A photograph of *Paradoxornis zappeyi*, the Gray-hooded Parrotbill, is posted on the Academy's online bird image bank VIREO (Visual Resources for Ornithology). The image marks a milestone—VIREO now features and markets images of half of the world's 10,000 known bird species.

January 22

Dr. Ruth Patrick, Academy limnologist and lifelong champion of environmental protection, receives the Abele Conservation Heritage Award from the Pennsylvania Fish and Boat Commission. The award recognizes citizens who have made outstanding contributions to the protection and conservation of the commonwealth's aquatic resources.



February 1

Having bid "aloha" to his presidential post at the Bernice P. Bishop Museum in Honolulu, Dr. William Y. Brown says "aloha" to the Academy. The museum's 28th President arrives just in time for a Valentine's Day blizzard, and quickly trades in his Hawaiian shirt for a wool sweater.



May 13

The American Association of Museums presents a MUSE award to the Academy's Education Department for its "Explore Butterflies" interactive computer station. This highly competitive award recognizes excellence in media programs produced by museums.

June 1



A busy day at the Academy: The special exhibit "Amazon Voyage: Vicious Fishes and Other Riches" opens, featuring the research of Academy Ichthyology Curator Dr. John Lundberg. The 195th Annual Meeting of the Academy is held. The Board of Trustees adopts a new strategic plan that will guide institutional activities over the next five years. Associate Curator of Paleontology Dr. Ted Daeschler

receives the Hayden Memorial Geographical Award for his outstanding research and discoveries of transitional fossils in Pennsylvania and the Arctic. Alaskan Fish Artist Ray Troll receives the Gold Medal for distinction in natural history art.



The Academy kicks off the tenth anniversary of the Research Experiences for Undergraduates (REU) program. Eight students gain valuable experiences working alongside Academy scientists in the field and the lab.

June 12

Dr. Clyde Goulden, Director of the Academy's Institute for Mongolian Biodiversity and Ecological Studies, receives the Friendship Medal from the government of Mongolia in a ceremony in the capital city of Ulaanbaatar. The award is the highest honor the country bestows on foreigners. Goulden received it for helping develop the field of environmental research in Mongolia.



A gruesome skull that mysteriously turned up in a New Jersey back yard makes national news when Academy Ichthyology Curator John Lundberg identifies it as belonging to a bizarre-looking fish called a wolf eel. How this denizen of the deep ended up in the yard remains a mystery.



July 11

At a press conference hosted by the Academy, the Union of Concerned Scientists releases the most comprehensive study to date of global warming's effects on Pennsylvania and its residents.

July 15–20

Four members of the Malacology Department decamp for Antwerp, Belgium to attend the World Congress of Malacology.



July 20

Volume 156 of the *Proceedings of the Academy of Natural Sciences* is published. It contains 17 scientific articles, including 14 by Academy staff and associates and descriptions of more than 120 new species.



September 4

The Ewell Sale Stewart Library reinstates public hours for its Reading Room. On weekdays, visitors are welcome to enjoy this impressive space and its remarkable collection of books and artwork.

October 6–7

Amazing treasures of the seas draw enthusiasts from near and far to the 25th annual Philadelphia Shell Show.



October 15

Philadelphia mayoral candidates Michael Nutter and Al Taubenberger outline their plans for a sustainable Philadelphia in a free forum hosted by the Academy.



October 26

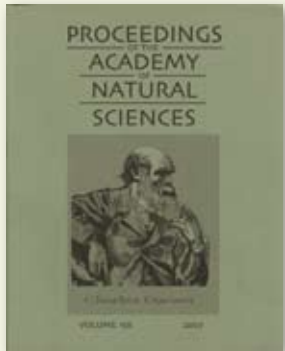
"Mad" scientists and spooky specimens delight trick-or-treaters of all ages at the Academy's Halloween Spooktacular Safari Overnight.



November 17

In honor of her 100th birthday and lifetime of scientific achievement, pioneering ecologist Dr. Ruth Patrick is the proud guest of honor at a glittering gala. Pennsylvania Governor Ed Rendell stops by.





July 25

The hour-long documentary, "John James Audubon: Drawn from Nature" premieres on PBS stations nationwide. Part of WNET's American Masters series, it features on-screen commentary by Academy Senior Fellow Robert Peck and Ornithology Collection Manager Dr. Nate Rice.

August 9 & 11

The Academy hosts distinguished visitors from China. Part of an exchange program hosted by St. Joseph's University, the participants represent schools, universities, and museums throughout China.



October 9

With assistance from the Nonprofit Finance Fund, the Academy completes a six-month survey of its physical plant. Findings are compiled in a comprehensive report that summarizes current conditions, prioritizes needs, and presents a replacement plan for the next ten years.

The Academy's innovative Women in Natural Sciences program (WINS) marks its 25th anniversary with a reception and public forum that explores the changing role of women in science.



December 21

An anonymous gift of \$750,000 arrives, capping off several years of fundraising efforts to create a fully endowed Archivist position at the Academy.

December 22

After two weeks of repairs and renovations, "Butterflies!" reopens its doors to visitors, just in time for the holiday crowds.



December 31

The Academy receives its largest single gift of 2007 in the form of a \$2.5 million bequest from the estate of John and Marjorie Foster.



Our Contributors

The Academy of Natural Sciences gratefully acknowledges the generosity of the many supporters who strengthened its foundation by giving \$250 or more in 2007.

\$250,000 and above

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Scientific Publications

During 2007, Academy staff and associates authored 71 scholarly works. Six works published in 2006 but omitted from that year's Annual Report are also included here. Names of Academy authors are in boldface.

- Akama, A. and **J. G. Lundberg**. 2007. *Brachyplatystoma* Bleeker, 1862 (Osteichthyes, Siluriformes): proposed precedence over *Piratinga* Bleeker, 1858 and *Piramutana* Bleeker, 1858. Case 3372. *Bulletin of Zoological Nomenclature* 64: 54–59.
- Allen, R. T.** 2007. Studies on the North American Protura 1: catalogue and atlas of the Protura of North America; description of new species; key to the species of *Eosentomon*. *Proceedings of the Academy of Natural Sciences of Philadelphia* 156: 97–116.
- Andreas, B. K., R. E. Showman and **J. C. Lendemer**. 2007. The 2006 Combined Crum/Tuckerman Workshop in Ohio. *Evansia* 24: 55–71.
- Araújo, A.** and **J. N. McNair**. 2007. Individual- and population-level effects of antimicrobials on the rotifers, *Brachionus calyciflorus* and *B. plicatilis*. *Hydrobiologia* 593: 185–199.
- Ashley, J. T. F., D. Libero, E. Halscheid, L. Zaoudeh** and H. M. Stapleton. 2007. Polybrominated diphenyl ethers in American Eels (*Anguilla rostrata*) from the Delaware River, USA. *Bulletin of Environmental Contamination and Toxicology* 79: 99–103.
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- Birindelli, J. L. O., **M. H. Sabaj** and D. C. Taphorn. 2007. New species of *Rhynchodoras* from the Río Orinoco with comments on the genus (Siluriformes: Doradidae). *Copeia* 2007: 672–684.
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- Callomon, P.** and **M. A. Snyder**. 2007. On the genus *Fusinus* in Japan III: nine further species, with type selections. *Venus* 66: 19–47.
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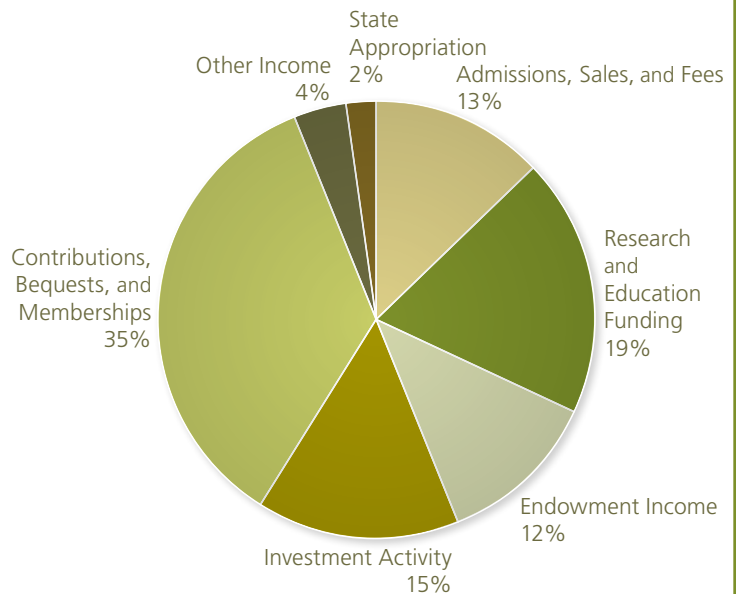


Financial Profile

for the year ending December 31, 2007

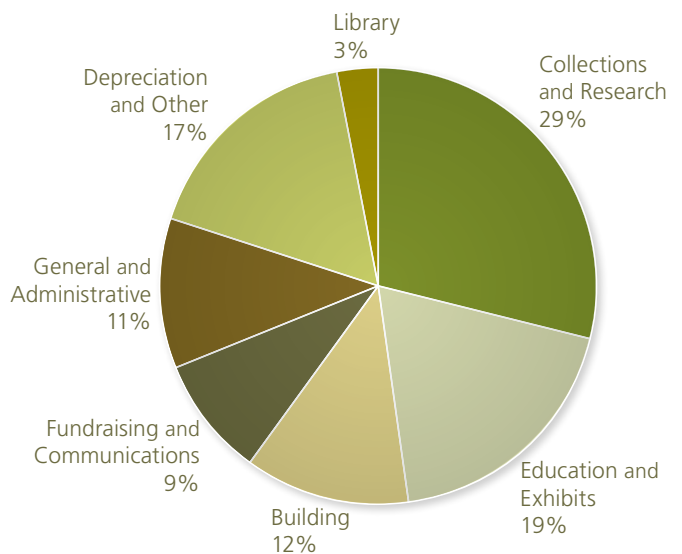
Revenue and Support 2007

Admissions, Sales, and Fees	\$2,820,462
Contributions, Bequests, and Memberships	\$7,490,887
Endowment Income	\$2,660,476
Investment Activity	\$3,124,621
Research and Education Funding	\$4,047,588
State Appropriation	\$471,000
Other Income	\$763,883
TOTAL REVENUE	\$21,378,917



Expenses 2007

Collections and Research	\$4,474,427
Education and Exhibits	\$2,960,683
Building	\$1,850,209
Fundraising and Communications	\$1,274,926
General and Administrative	\$1,707,866
Depreciation and Other	\$2,646,821
Library	\$458,300
TOTAL	\$15,373,232

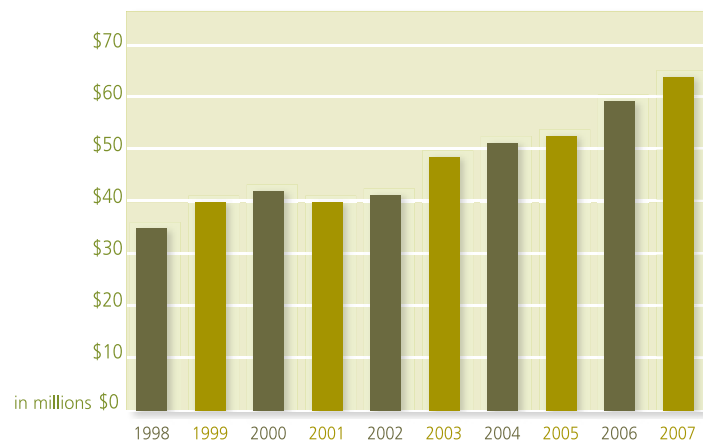




Endowment Growth

Year-End Endowment
Market Value (MM)

1998	\$34.725
1999	\$39.781
2000	\$42.690
2001	\$39.794
2002	\$41.146
2003	\$47.463
2004	\$51.066
2005	\$53.230
2006	\$57.827
2007	\$64.743



Net Assets

Net Assets, Beginning of Year	\$84,496,520
Net Assets, End of Year	\$90,502,205
Change in Net Assets	\$6,005,685



Our Staff

The Academy is grateful to the staff members who contributed daily to our success in 2007.

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