

THE ACADEMY
OF NATURAL SCIENCES
of DREXEL UNIVERSITY

**Five Year Sustainable Strategic Plan
2012-2017**

November, 2012

We are pleased to enclose for your review the Sustainable Strategic Plan for the Academy of Natural Sciences of Drexel University.

Our planning efforts began in October 2011 following the Academy's historic merger with the University, completed on September 30th. More than 100 people were directly involved in the planning process, including the Academy's senior team, Board, Staff, Drexel leadership, skilled external consultants, and influential stakeholders. Our goal was to create an "evergreen" five-year plan that will demand annual assessment and forward thinking, within the context of the University's recently approved Plan, so the Academy and Drexel can fully leverage the potential of our combination.

As we assess our strengths and future opportunities, it is clear that the Academy must find its place as the "Public Stage for Science" in the Philadelphia region. Our goal should be to create innovative exhibits, engaging education programs, compelling visitor experiences, and relevant research that work in concert to address two fundamental questions:

- Life on Earth: How did we get here?
- Sustainability: How do we maintain our existence?

A visit to the Academy should be a transformational journey that weaves these questions together and confirms one of our key vision statements: *The **new** Academy of Natural Sciences Museum will be **the destination** in the region to interact with our changing world.* The results: engagement, education and impact.

We hope you will give our plan your thoughtful attention. Together, we have an unprecedented opportunity to propel the Academy of Natural Sciences of Drexel University *sustainably* into its Third Century.

Our thanks for your consideration and support.

Sincerely,



George W. Gephart, Jr.
President and CEO
The Academy of Natural Sciences
of Drexel University



John A. Fry
President
Drexel University

Introduction

In May 2011, the Academy of Natural Sciences and Drexel University announced a unique affiliation that unites two of the city's most respected research institutions. The partnership will further enhance Philadelphia's reputation as a leader in scientific research and education and will promote discovery, learning, and civic engagement in the natural and environmental sciences.

The affiliation promotes a sustainable future for the Academy by providing countless opportunities for collaboration, access to additional resources, and innovative, new ways to access our rich collections and science. The new relationship will enable shared research on issues such as environmental degradation, biodiversity, global ecosystem interactions, and sustainability.

The Academy of Natural Sciences of Drexel University will continue to stand at the forefront of scientific research and education and will further establish Philadelphia, the birthplace of modern science in North America, as a city central to the advancement of the natural and environmental sciences.

The Academy's new Sustainable Strategic Plan will position the Academy for success over the next five years and beyond. The new strategic plan identifies an exciting and ambitious vision for the Academy—one that continues to build creative collaborations across Drexel in a broad range of disciplines while ensuring that the Academy remains a leader in biodiversity and environmental science.

The Strategic Planning Process

The development of the Academy's Sustainable Strategic Plan was a comprehensive and integrated 10-month planning process that involved the Board's Strategic Planning Committee, the Academy's senior leadership team, Academy staff, members of Drexel's leadership team, and industry experts within the Philadelphia community. The underlying goal of the Academy's new strategic plan was to create a five-year "evergreen" plan that integrates with Drexel's recently adopted strategic plan (2012–2017).

The strategic planning process commenced in October 2011 with a two-day senior management retreat at which the Academy's critical path issues for the next five years were identified. After the retreat, strategic planning task forces, composed of Academy Board and staff and Drexel faculty and staff, were created to develop white papers on the identified five critical path issues: Organization; Assets; Product and Experience; Who We Are; and Sustainability. Their collective guidance, support, and commitment were an invaluable resource in the development of our five Strategic Goals.

Critical Path Issues Task Forces

Organization: Co-Chairs George Gephart and David Velinsky, Cynthia Heckscher, David Lazar, Mike Reed, Mark Greenberg, Helen Bowman, James Tucker, Dave Rusenko, Sara Hertz, Janet Fleetwood, Rick Biddle

Assets: Co-Chairs George Gephart and Ted Daeschler, Dave Rusenko, Bob Francis, Danuta Nitecki, Rita LaRue, Carl Cutler, Allen Model, Jim Macaleer, Cynthia Heckscher, Sara Hertz, Rick Biddle

Product and Experience: Co-Chairs Sara Hertz and Jacquie Genovesi, Ron Clark, Daniel Corti, Ted Daeschler, Louisa Hanshew, Lucy Kerman, Moe Preston, Timshel Purdum, Ann Reed, Allen Sabinson, Jennifer Sontchi, Heather Sullivan, Rick Biddle, Janet Fleetwood, George Gephart, Cynthia Heckscher

Who We Are: Co-Chairs Amy Marvin and Bob Peck, Peter Austen, Lori Doyle, Cecelia Fitzgibbon, Jacquie Genovesi, Mark Gisi, Rich Horwitz, Brian Keech, Moe Preston, Ann Reed, Nate Rice, Teri Scott, Janet Fleetwood, George Gephart, Cynthia Heckscher, Sara Hertz, Rick Biddle

Sustainability: Co-Chairs David Velinsky and Roland Wall, Amy Marvin, Erin Johnson, Jill Sybesma, Roger Thomas, Ken Warren, Wistar Morris, Patrick Oates, Donna Murasko, Shannon Marquez, Trish Gallagher, Jen Anderson, George Gephart, Cynthia Heckscher, Sara Hertz, Rick Biddle

With the guidance of the task forces and the Academy's senior leadership team, eight draft strategic goals and guiding principles were developed and tested with Drexel's strategic planning leadership. Through additional input from the Board Strategic Planning Committee, the eight draft strategic goals were distilled into five strategic goals, and shared values were identified. Five working groups were created involving Academy staff and industry experts to outline objectives and strategies for each of the identified goals. Once the strategies were outlined, the working groups discussed priorities, timelines for implementation, and the financial impacts or return on investment from the fulfillment of the strategies or tactics.

Throughout the 10-month planning process, the Strategic Planning Committee of the Board met to test and endorse the direction of the strategic plan and to advocate to the full Board on the key findings, recommendations, and objectives.

The Academy's Sustainable Strategic Plan is a comprehensive and integrated roadmap for the next five years. As such, the plan's strategic initiatives reflect a strong interconnection between the Academy's core mission, its compelling vision, and the guiding principles and shared values that link the Academy and Drexel. Like the new partnership, many of the strategies and tactics outlined within the plan will help to fulfill numerous goals of the plan and address core institutional "fabric" objectives that were identified by the senior leadership team and the Strategic Planning Committee. These core institutional fabric

objectives—Sustainability, Financial Planning, and Fundraising Planning—are woven into the strategies and tactics to ensure that the Academy’s strategic plan is both sustainable and realistic.

Still in progress is the detailed roadmap of the Academy’s objectives and strategies. It contains actions that have been identified, a timeline for implementation, and the anticipated budget impact or return on investment (ROI) achieved through the implementation of the strategy. This detailed roadmap will be an important management tool for the Academy senior management and the Board as the metrics can be assessed and evaluated on a periodic basis.

Mission Statement

With input from staff, Board members and others contributing to our planning process, we have embraced the following mission statement:

“We advance research, education, and public engagement in biodiversity and environmental science.”

Vision

1. The Academy/Drexel partnership, supported by world-class scientists, research, and collections, will create the leading academic experience focused on experiential learning of biodiversity, earth, and environmental science.
2. Every Academy experience will have an educational impact.
3. The **new** Academy will be **the** destination in the region to interact with our changing world.

Guiding Principles

The Academy identified the following “core institutional values” as guiding principles that will serve to shape the direction of the strategic plan.

1. There will be a public exhibiting space at 1900 Benjamin Franklin Parkway. We will significantly enhance our overall visitor experience in order to sustainably grow both our audiences and our visitation.
2. A core component of the Academy’s identity is an authentic focus on real science: “Science lives here.”
3. We are committed to providing quality educational experiences in the natural and environmental sciences for people of all ages, ranging from young children and families to adults.
4. The Academy’s collections, library, and archives are held in the public trust for future generations, and we are committed to their thoughtful and active stewardship.

5. We are committed to pursuing collaborative opportunities with partners in the academic, scientific, educational, environmental, and cultural communities.
6. We will strive to be a leader in sustainability in the region and to become the leading resource for environmental issues relevant to our audiences.
7. We will strive to maintain our position as a leading research and academic institution in the natural and environmental sciences.
8. Our product and experience must add economic value to the overall Academy/Drexel affiliation, as well as other, less tangible values.
9. We seek out and expect leadership expertise and quality work from our staff and colleagues in all areas.

Shared Values

As identified in the Drexel University strategic plan, we embrace the core values of our partner as we frame our strategic initiatives.

1. **Quality**: Ensure that an ongoing and pervasive quest for quality informs the decisions we make, including the people we hire, the programs we offer, and the way we conduct ourselves.
2. **Integrity**: Demonstrate integrity through rigorous adherence to ethical standards; respect for shared governance; support for work-life balance and equitable policies; impartiality and freedom from conflicts of interest; and trust-based relationships with academic, corporate, government, and community partners.
3. **Diversity**: Create and support a diverse community in all of its manifestations, both because of its instrumental value—it makes both Drexel and the Academy more competitive globally—and its inherent value, and also because it fosters understanding, respect, and opportunity for all.
4. **Access**: Provide access to Academy experiences and programs to as many diverse groups as possible through grants and contributions.
5. **Stewardship**: Provide exceptional stewardship of the Academy's financial and physical resources and grow these resources through visitation, philanthropy, government support, an incentive-driven resource allocation process, and wise investment of our endowment.
6. **Innovation and Entrepreneurship**: Continue to take chances, break the mold, defy conventional wisdom, and strike out on our own to start new ventures and forge an innovative path forward.

The Five Strategic Goals

- I. **Organization**: *Create an organizational structure that builds a fiscally healthy business and engaged employee culture*
- II. **Assets**: *Unlock and leverage the value of the Academy*
- III. **Public Experience**: *Through engaging, innovative, and personal connections, ignite the passion of our internal and external audiences, encouraging them to learn, explore, and engage in the wonder of the natural and environmental sciences*
- IV. **Education**: *Become the premier learning lab in the Philadelphia region for the natural and environmental sciences*
- V. **Research and Sciences**: *Be the preeminent research and academic institution oriented toward experiential learning in the natural and environmental sciences, and serve as a magnet to researchers, educators, and students by showcasing the combined strengths of Academy and Drexel University scientists*

Goal I: Organization

Create an organizational structure that builds a fiscally healthy business and engaged employee culture that

- leverages brand and identity
- maximizes the resources of the Drexel/Academy partnership and emphasizes being part of Drexel's "One University" concept
- achieves the University and Academy's shared goal of "break-even or better" financial performance for the Academy in fiscal 2015

Strategic Objectives:

- A. *Develop an institutional culture and salary structure that creates merit-based performance, ensures accountability, and builds a strong team.*
 1. Finalize organizational structure and reporting relationships
 2. Develop accountability and performance expectations
 3. Align performance and compensation structure
- B. *Create a plan that analyzes the Academy's services and activities and maximizes the use of these resources.*
 1. Perform program reviews across the Academy

2. Develop assessment criteria for allocation of Academy resources toward programs and services
3. Develop a plan that focuses on investing in programs and services with high financial and cultural ROI

C. *Achieve financial viability by producing break-even or better financial results for fiscal 2015.*

1. Develop an enrollment and retention plan with the University that assures the financial success of BEES
2. Develop a concept plan for vision implementation, including visitor experiences, programs, membership development, and marketing
3. Develop implementation strategies from the new facilities concept plan
4. Develop a long-term operating plan for the Academy

D. *Develop an Academy Culture that fits within Drexel's One University concept, reflects high employee engagement and satisfaction, and encourages a strong sense of community.*

1. Develop an internal communications program that displays timeliness, accuracy, and transparency
2. Create a set of tactics that collectively works to deliver a more unified Academy across all functions.
3. Embrace Diversity as a shared value and create tools for encouraging inclusion in recruitment, programming, and outreach, among other activities.

E. *Create a plan to strengthen the depth and breadth of the Academy's board through strategic recruitment and training in best governance practices.*

Work group composition: Megan Weyler (Drexel), Dave Rusenko, Helen Bowman (Drexel), Jacquie Genovesi, Sara Hertz, Bob Drury (external expert), George Gephart

Goal II: Assets

Unlock and leverage the value of the Academy

The Assets goal is divided into two sets of objectives, related to real estate assets, including use of facilities, and collections assets.

1. **Real Estate**

Strategic Objectives

- A.** *Identify the core Academy functions that can be relocated from, retained, and/or enhanced at our 1900 Benjamin Franklin Parkway location while further leveraging the visitor value of the Parkway campus.*
 - 1. Develop planning criteria for evaluating Academy core functions currently located at the 1900 Parkway address that do not directly contribute to the visitor or programmatic value inherent in the site
 - 2. Explore options for leveraging and housing the use and value of the Academy's "back-office" functions
- B.** *Leverage our investment in the 1900 Parkway building to showcase its architectural beauty while creating visitor/retail amenities, educational facilities, and compelling public exhibition spaces that promote the Academy's scientific and cultural assets.*
 - 1. Assess potential options for enhancing the Academy's current physical assets, including its sidewalks/plaza, location, and retail
 - 2. Build retail amenities that connect the Academy with both the Parkway and 19th Street to increase traffic flowing to the museum, resulting in increased visitation to the Academy's programs, exhibits, and activities
 - 3. Revisit the 2009 facility Master Plan has value, and as necessary, engage staff and planners to reinvent and expand the Academy visitor experience
- C.** *Leverage the value of a specialized Parkway campus to continue growing and developing Drexel-branded campus districts that are mixed use in character.*
 - 1. Engage partners in identifying potential revenue-generating options, including the Academy's hidden assets (location, air-rights, frontage, etc.)
 - 2. Develop a space plan to address the short- and long-term classroom and lab space needs for the BEES coursework

2. **Collections**

Collections at the Academy are usually thought of as the biological collections and Library and Archives collections. These and other collections resources are embodied in a variety of formats, such as biological specimens, geological specimens, paper (books, journals, reports, catalogs, labels), art/artifacts, digital, film, and textiles. Digital collections, in particular, offer new opportunities and challenges.

Positioning Statement

Optimize stewardship, growth, and availability of the Academy's collections in all their forms so that these unique resources can promote discovery and become ever more central to research, teaching, and exhibition.

Strategic Objectives

A. Address stewardship issues of ANS collections. Explore the ramifications of the Drexel University affiliation for collections assets, including developing plans for increased educational use of collections.

1. Determine the need and protocols for teaching collections for students from the Department of Biodiversity, Earth, and Environmental Science (BEES)
2. Create a plan to determine how best to utilize the ANS exhibits collection as the core of a centralized teaching collection at the Academy, including management/staffing needs, renovation needs, and current education collections
3. Determine the Library's role in providing traditional and online resources for BEES and other students in coordination with Drexel University Libraries (DUL), and address the implications for access to licensed electronic resources negotiated by ANS and DUL
4. Create a plan that addresses the infrastructural needs for BEES students and faculty, as well as other academic areas, when working with collections assets, including health and safety concerns
5. Develop a plan to address the additional staffing needs (especially in Library and Archives) for supporting the significant increase in requests from a variety of Drexel constituencies
6. Create a plan to address any security concerns; mitigate vulnerabilities and risks to collections
7. Consider the role of the Live Animal collection

B. Develop a plan for the capture, management, and preservation of digital data.

1. Explore the emerging role of digital data, especially images, in research and education
2. Identify biological and archival collections that have been digitized. Prioritize those requiring additional processing for access, as well as additional collections for which digital access will be valuable to research, teaching, or revenue generation. Develop plan to curate digital surrogates to the ANS collections of highest priority
3. Explore data integration projects in collaboration with Digital@Drexel initiative(s). Determine how cross-content queries of ANS collections could work
4. Establish an Office of Image Resources and Intellectual Property Rights to promote revenue-generation from digital collections assets
5. Identify the funding possibilities for "big-data" projects, including exploration of the planning underway at Drexel to establish a university-wide infrastructure for curating and preserving digital assets
6. Develop a plan to support the staffing and infrastructure needs of digital data
7. Develop work plan that addresses secondary priorities for gathering digital data

C. Explore revenue-generating potential of collections.

1. Establish an Office of Image Resources and Intellectual Property Rights (IPR) at the Academy
2. Create an inventory of feasible revenue generators and prioritize these, including exploring the potential for additional grant support for collections
3. Develop work plan to address secondary priorities related to Scientific Publications

D. Determine location or co-location of collections. Consider the best and highest use of the Parkway location while maintaining, using, promoting, and exhibiting collections.

1. Evaluate best location of specimens, archives, and reference materials using criteria such as those presented below. Develop a plan of action that can adapt to issues from strategic planning that will impact space usage and other opportunities
2. Assess importance of proximity to researchers, students, and philanthropic prospects
3. Determine rate of growth of collections with respect to storage needs
4. Estimate costs and efficiency of off-site shelving/storage. Consider collaboration or outsourcing management with DUL
5. Assess alternative storage options, including improvements in environmental conditions, access, and associated requirements for collections care and delivery
6. Maximize the opportunities of research, teaching, and exhibition
7. Consider that the relocation of collections includes relocation of collection managers and support staff, and that with each relocation a link to the museum programming/events/cultivation would be diminished
8. Review off-site collections storage initiatives at other institutions
9. Determine how the space management in current building(s) can be improved

Work group composition: Ted Daeschler, George Gephart, Danuta Nitecki (Drexel), Clare Flemming, Dan Thomas, Roger Thomas, Gary Rosenberg

Goal III: The Public Experience

Through engaging, innovative, and personal connections, ignite the passion of our internal and external audiences, encouraging them to learn, explore, and engage in the wonder of the natural and environmental sciences.

Strategic Objectives:**A. Define our audiences and assess current experiences.**

1. Conduct comprehensive studies of current and desired audiences
2. Assess current services and activities
3. Identify new or expanded exhibit and program areas for specific audiences, such as younger children, college students, families, and older adults

- B. *Create a sense of wonder about the workings of the natural world through the creation of engaging, authentic, and memorable experiences that allow visitors to connect with one another.***
1. Develop services and experiences that balance mission and margin to provide engaging and memorable experiences
 2. Expand gallery experiences to increase visit duration and promote repeat visitation
 3. Identify and eliminate barriers to engagement and accessibility
 4. “Intensify and Improve the Student Experience” (strategic initiative of Drexel’s plan) by creating attractive social programs that enhance Drexel student involvement with the Academy
 5. Build a vibrant and extensive social media component into all programs
- C. *Create a facility concept plan that leverages the learning, experiences, and opportunities of the new Academy experience.***
1. Review current Master Plan in light of affiliation with Drexel University and opportunities it offers
 2. Research cutting-edge museums and develop a matrix of the results
 3. Use data from audience assessment to develop a plan to prototype new visitor experiences
- D. *Based on the efforts of (C) above, develop a case for support to fund the reimagined experience.***
1. Test the case with internal and external stakeholders for feasibility
 2. Begin development of capital campaign to create the Academy’s Third Century

Work group composition: George Gephart, Jacquie Genovesi, Sara Hertz, Roland Wall, Timshel Purdum, Kelly Donahue, Teri Scott, Jill Sybesma, Sean Duran (External Expert), Erin Johnson

Goal IV: Education

Become the premier learning lab in the Philadelphia region for the natural and environmental sciences

Strategic Objectives

- A. *Build strong collaborations across Drexel schools to extend the educational reach and competence of the Academy.***
1. Develop museum education courses that could be offered as part of a career/professional development curriculum
 2. Hire a new joint (ANS/Drexel) position for research in informal learning, in particular after-school STEM education, learning in museums, and use of technology in museum education/exhibits

3. Create a science teacher certification program/graduate program for professionals with STEM degrees
4. Create new programs that further leverage our existing resources and/or expertise

B. *Leverage the Academy's educational resources to create new revenue opportunities and to promote the One University concept.*

1. Leverage the success of the WINS program to create and implement new research projects, offering online courses (noncredit, possible certificates), and significantly increase the number of students served
2. Expand opportunities to partner with schools to leverage resources and children's passion for learning and exploration
3. Repackage what we are already doing to leverage Drexel's ability to use technology to reach broader audiences
4. Use the resources of the School of Education to increase revenue through Act 48 credits and CEUs
5. Use Drexel eLearning to partner with the School of Public Health and others on relevant topics that either increase awareness or offer new fee-based programs and lectures

C. *Create a science initiative involving a public constituency in which the Academy can be recognized as a leader. (Examples include NASA programs (where people go to experience real science); School for Field Studies of Boston University; Earth Watch; and Road Scholar).*

1. Develop a white paper on the opportunities and challenges of engaging global communities in a mission-critical educational and/or scientific endeavor

Work group composition: George Gephart, Jacquie Genovesi, Sara Hertz, Jean Brody (Drexel), Timshel Purdum, Bill Lynch (Drexel), Tina Richardson (Drexel), Rick Biddle, Shannon Marquez (Drexel), Erin Johnson, Roland Wall

Goal V: Research and Sciences

Become the preeminent research and academic experiential learning institution in the natural and environmental sciences, and serve as a magnet to researchers, educators, and students by showcasing the combined strengths of Academy and Drexel University scientists.

Positioning Statement

Research is one of the core activities of the Academy. In addition to expanding our knowledge of the environment and biological diversity, research inspires and informs the Academy and its new affiliation's other missions, such as teaching, public outreach, and service. The best research institutions are those that have core faculty who are considered preeminent in their fields of study, are recognized recipients of the most competitive and prestigious research awards sponsored by public and private funding sources, have world-class research resources and facilities, and are destinations for researchers from around the world. To enhance our stature in

natural and environmental sciences, we need to obtain and retain a critical mass of researchers, post-doctoral fellows, and graduate students as well as a research infrastructure (i.e., collections and research laboratories) that allow optimal development of cutting-edge programs. We should be entrepreneurial and nimble in our research direction, follow areas that may have a large societal influence in the near term, and embrace the challenges and risks of our efforts.

Strategic Objectives:

- A. *Improve integration of various research programs that span traditional boundaries and disciplines and leverage Drexel's research technological capabilities; i.e., the intellectual climate will be nurtured to encourage new and creative collaborations to emerge.***
 - 1. Distribute awards for cross-disciplinary research projects to staff/faculty
 - 2. Build a diverse Co-op program (Regular and Research) in Systematics, Earth Sciences, and Ecology
 - 3. Consider Research Assistantship, Curatorial Assistantship, and Teaching Assistantships
 - 4. Create Post-doctoral Research Fellows
 - 5. Establish an endowment-supported BEES Research Fellowship (2 year) that rotates through faculty
- B. *Establish a framework for all research and teaching programs that focuses on discovery, public engagement, and environmental stewardship.***
 - 1. Resolve short- and long-term facilities and equipment needs and staffing shortfalls; develop long-range plans for local and international research field stations
 - 2. Encourage staff to become actively involved in public programming and education (emphasize discovery, stewardship, citizen science, and community and school partnerships)
 - 3. Establish Science-Exhibits Advisory Committee
 - 4. Provide relevant content to educate public on new and controversial topics of the day e.g., fracking, evolution; serve as a public voice on issues and provide unbiased science
- C. *Encourage research in targeted staff areas of expertise while continuing to support excellent programs across the institution***
 - 1. Develop a plan for strategic hires that can foster and enhance research, education, and outreach
 - 2. Develop funding strategies and plan to secure major center grants (>\$25M as lead institution) from agencies including National Science Foundation, U.S. Geological Survey, U.S. Environmental Protection Agency, and others
 - 3. Establish external Science Advisory Board for periodic review and to focus research direction and promote enhanced visibility (directed toward basic research and directed research)
 - 4. Enhance and foster excellence in experiential teaching at all levels (e.g. public and students)

Work group composition: Ken Lacovara (Drexel), Sean O'Donnell (Drexel), John Lundberg, Nate Rice, Tracy Quirk, Jen Sontchi, Mike Kaczmarczik, Paul Overbeck, Roland Wall, David Velinsky

<i>Institutional fabric objectives that must be included in each of the core strategic initiatives</i>

These core institutional fabric objectives are woven into the strategies and tactics that fulfill the Plan's goals and objectives, ensuring that the Academy's strategic plan is both sustainable and realistic.

1. Sustainability

- I. Acknowledge that sustainability requires balancing the needs and the demands of both natural and human systems in the present and the future
- II. As a recognized leader in natural and environmental science research, education, and outreach, the Academy must understand, evaluate, communicate, demonstrate, and promote sustainability through operations and programs
- III. Incorporate the values of sustainability beyond the operational aspects and into the visitor experience, exhibition, and revenue centers of the Academy in our strategic plan

2. Financial Planning

- I. Create a sustainable financial model for the Academy to break even on or before June 30, 2015, from its three core businesses: Research/Sciences; Public Institution/Education; and Stewardship

3. Capital Campaign/Fundraising Planning

- I. Create and identify opportunities to engage our stakeholders in raising new sources of capital and operating resources