Strategic Plan

The Cary Institute of Ecosystem Studies

2012-2017

Introduction

The Cary Institute will soon enter its fourth decade. Firmly established as a scientific organization conducting excellent environmental research with impeccable ethical standards, the Institute faces some significant challenges in the coming years. The Cary Institute finds itself in a climate of increasing public skepticism, even active distrust, of science and decreasing availability of public funding to support intellectual endeavor. This coincides with a growing human population that is putting unprecedented demands on the life-support systems of our planet, threatening the stability of the biosphere, its biodiversity, and its ability to support civilized human society.

With a firm footing in scientific excellence, the Cary Institute must continue to build public identity, spanning local to international, in a time when a large number of institutions also strive for public attention. A central question is: what can the Cary Institute do that is different, and better, than the activities of the vast number of faculty at colleges and universities who study the environment?

The full-time scientific staff of sixteen composes the core of the Cary Institute. Most have been employed for several decades, having been carefully recruited to Millbrook as the best and brightest young scientists by Gene E. Likens during the mid-1980s. This staff garners research grants providing about $5,000,000 of funding annually—nearly half of the Institute's operating budget. (The remainder is largely provided by the generous endowment deriving from the estate of Mary Flagler Cary). The core scientific staff is assisted by research staff (supported by grants) and staff for administration and facilities (largely supported by endowment funds). The Institute also provides a wide range of research facilities, including: laboratories, vehicles, IT, library services, and 2000 acres of native landscape for conservation and field studies.

With his arrival as the second president of the Cary Institute in 2007, William H. Schlesinger engaged an array of activities designed to increase the visibility of the Institute, from local to international audiences. Biweekly columns in the *Poughkeepsie Journal*, daily *Earth Wise* segments on WAMC Northeast Public Radio (90.3 FM), active pursuit of national press coverage, and Friday-night public lectures have all increased the recognition of the Cary

Institute. Several of our scientists have engaged in active translation of Cary Institute science to inform public policy decisions at the local to national level. Among the public, the Institute is increasingly well known for its studies of acid rain, disease ecology, and the Hudson River.

During the next decade, nearly 90% of the Institute's core scientific staff will reach the normative retirement age, having been hired as a group about 30 years ago. How and when these individuals are replaced will have a major influence on the future scientific research conducted at the Cary Institute. At the same time, this level of staff turnover is an unprecedented opportunity to refresh and refocus the mission of the Cary Institute.

While maintenance has not been deferred, a number of the buildings of the Institute are likely to require significant upgrades within the next decade. New research instrumentation is always needed, as new analytical capabilities become available, including powerful new computational capabilities for the analysis and maintenance of large datasets.

The Cary Institute cannot do everything, so it also faces questions of focus. What is the best balance between: 1) basic versus applied research, 2) research versus education, and 3) science versus policy? The Institute will need to allocate between these endeavors to maximize its lasting impact on the environmental problems that face the world.

Science

The Cary Institute has provided strong, internationally-recognized research programs investigating the basic workings of ecosystems and the efficacy of the ecosystem approach. Although not specifically targeted at applications, the research at the Cary Institute has frequently identified new environmental problems and explored pathways for their solution. Cary scientists have often worked with other organizations to educate diverse audiences, improve the management of ecosystems, and develop better public policies. Among scientists at the Cary Institute are two members of the National Academy of Sciences, one recipient of the National Medal of Science, four members in the American Academy of Arts and Sciences, three past presidents of the Ecological Society of America, and six "highly-cited" researchers on the Web of Science—just to mention a few of the scientists' accolades.

Until now, the direction for the Cary Institute's science program has been determined largely by individual scientists, with little institutional constraint. This model has led to the organic formation of several groups that have developed, waxed, and waned with scientific interest and funding. Examples of important research areas in which Cary scientists currently are international leaders include forest ecology and biogeochemistry, disease ecology, urban ecology, and the ecology and management of large rivers (including the Hudson). The Cary Institute is also recognized as a "convener" of worldwide scientific expertise, when particular problems demand new and immediate synthesis of what is known. In comparisons with peer

institutions—both independent institutions and prominent university departments—the Cary Institute science program stands out as among the best (Table 1).

What is unusual at the Cary Institute is the cooperative nature of our endeavors. For 2012, 40% of the papers published had more than one full-time scientist from the Cary Institute as an author. Similarly, 80% of the active grants were managed by more than one Cary scientist.

We believe that the Cary Institute must move to a new phase of endeavor—striving to leave the greatest impact on the nation's environmental policies to ensure healthy, viable ecosystems for future generations. First, the scientific staff must identify the most important environmental problems facing our nation. Unfortunately, that list is long, so it is crucial to select areas in which the Cary Institute is well positioned to make significant contributions, by elucidating the extent, causes, and potential solutions to critical environmental problems.

The Cary Institute's science program should focus on: (1) the ecology of *freshwater ecosystems* and their inhabitants, (3) the ecology of *infectious diseases,* and (3) studies of human impacts on environmental chemistry, also known as *biogeochemistry*. . These are areas of clear societal need and areas of existing or developing strength at the Cary Institute. There is a need for leadership in these areas and an opportunity for the Cary Institute to provide such leadership.

Focal areas are not intended to be comprehensive or exclusionary—undoubtedly Cary scientists will work additionally on subjects outside these focal areas. Focal areas must not discourage research in newly emerging areas, produce new administrative structures, or erect barriers within the scientific staff. It is worth noting that our work on urban ecology, invasive species, and environmental education cuts across each of the proposed focal areas and is complementary to them.

Future hiring should focus on strengthening core staff, especially in the focal areas. These are areas of rapidly developing scientific opportunity in which strategic hires could greatly strengthen the Institute's position. To support these new hires, the Cary Institute will need to provide full salary until the new scientists can firmly establish their research programs at the Institute. The Institute will also need to provide major specialized equipment to aid the professional development of new staff. As in all hiring decisions, an emphasis on increasing the diversity of the scientific staff at the Institute is paramount.

The Institute should consider supplementing the existing core scientific staff with a team of postdoctoral associates and visitors who could be deployed into new or existing research areas for finite periods of time. We know of no current, named national program to support postdoctoral research in environmental science. Establishing one at the Cary Institute would bring much attention to our scientific program. This approach would also provide the Institute with an efficient way to explore new scientific areas, extend the reach of the core staff, build technical capacity, and develop new collaborations, without making long-term commitments to new research areas. This program also could be used as one tool (although not the sole tool) to increase staff diversity, for example by taking advantage of post-doctoral fellowships for minorities.

The Cary Institute needs to think strategically about the likely trends in research funding during the next decade. The core scientists may find it increasingly difficult to garner the existing benchmark of 42%/yr salary recovery from outside sources. At the very least, the single-minded pursuit of this target could stifle exploration of promising new areas of research or reduce the ability of the Institute to respond to new and immediate demands for its expertise.

Allocation of funds to these endeavors—new hires, postdoctorates, and equipment—will pose significant challenges to budget, begging the question: how many scientists should comprise the core staff? We believe that 12 members, four in each of three focal areas, is an ideal number. This is a reduction of 25% from current staffing levels, allowing some funds to initiate the postdoctoral program.

Centers

The President can establish Centers within the Cary Institute, based on initiatives presented by the scientific staff. The Centers will not simply recognize areas of strength amongst the scientific staff, although they may reflect one or more focal areas. Rather, they should represent a commitment of members of the scientific staff to explore innovative areas of research, education, or communication. These activities might include the planning of collaborative research and pursuit of new extramural funding. Ideally, they will engage the Cary Institute in new, large cooperative efforts and national initiatives that involve other institutions. These centers will be headed by a director, appointed by the President from the senior scientific staff. Each center will be established for an initial period of three years, with renewals possible based on productivity, such as exceptional publications, new grants and extraordinary efforts of public outreach.

Education and Outreach

It is nearly impossible to separate the education and public outreach programs of the Cary Institute, which provide a near-seamless set of activities ranging from K-12 education for youngsters to public lectures and management forums for professional adults. The science done at the Cary Institute is deeply embedded in the education program at all levels. The Institute provides educational programs in public and private grade schools in the local area. Education includes active programs for undergraduate and graduate students who visit from other institutions to interact with our scientists. Curriculum materials developed at the Cary Institute are distributed to schools nationally.

Cary Institute public programs range from Friday-night lectures on current issues of environmental science to weekend field excursions to record wildlife on the Institute's grounds. Outreach extends to cooperative arrangements with the local Ralph T. Waterman Bird Club and our deer-management program that involves local sportsmen. All of these activities are designed

to increase the number of citizens who understand and care about natural ecosystems, who understand the science behind current environmental problems, and who support the judicious care and management of natural resources and nature. For example, the public lecture series is routinely attended by >150 people (our capacity), who want to learn about environmental problems, especially from the scientists who study them.

Presently, this breadth of programs is managed in a diffuse sometimes disorganized manner across several of the Cary Institute's staff and programs. Our strategic plan aims to provide a coherent framework for these education and outreach programs, under a management team consisting of the President, the Director of Communications, the Head of Education, and a new position—a Research Naturalist, who will coordinate all research, recreational, and weekend educational programs on the grounds of the Institute.

The Office of Communications, currently with a staff of three, manages the Institute's publications, public programs, website, social media, and press coverage. Increasingly, interactions with the press involve social media, which should be expanded in the coming years.

The Cary Institute has recently helped to form the Northeast Science and Policy Consortium[1]—a network of six like-minded organizations that are committed to translating the best, new science on environmental problems to policy makers who need it. Our strategic plan also includes the addition of an individual with specific skills as a liaison to enhance understanding of our research within the media, policy, and advocacy communities. This individual will focus on translational ecology—carrying the sometimes esoteric presentation of results by scientists to advocacy groups and policy makers, who might benefit from a clear understanding of the current state of the science surrounding environmental issues. The work of a translational ecologist is not advocacy or lobbying, but rather the capstone-activity in our goal to provide "the science behind environmental solutions."

Writer/Artist-in-Residence Program

In the spring of 2011, the Cary Institute began a program sponsoring writers and artists, with specific interest in environmental subjects, to visit as guests for periods ranging from several weeks to one year. The program complements several of the Friday-night lectures that have paired artists (Rebecca Allan) and musicians (Rhonda Rider) with lectures by the scientific staff to explore how humanists and scientists record the state of ecosystems for future generations. Writers Akiko Busch (Spring 2011), Michael Tennesen (Fall 2011) and Lynne Cherry (current) have been early members of the writer-in-residence program, and artist Maria Coryell-Martin will visit in fall 2012. The program is designed to provide maximum creative flexibility for its participants, hoping that they will produce one or more products that translate ecosystem science to a new audience and asks the participants to present a lunch-bunch or more formal seminar to describe their accomplishments at the Institute. It is an important part of the

[1] Renamed in early 2013 to the Science Policy Exchange.

strategic plan for the Cary Institute to continue to cultivate this new group of emissaries for the dissemination of ecosystem science.

Facilities

Three buildings form the core of the Cary Institute, providing more than 50,000 square feet for offices, laboratories, and a 150-seat auditorium (Figure 1). All were constructed since 1975, and none of these facilities has deferred maintenance issues. The Likens Laboratory provides adequate space for chemical analyses for the next decade, but quality office space could become limited if the scientific (and postdoctoral) or emeritus staff were to grow significantly. The buildings known as "Cary West" are located along State Route 82, and are the location of most of the laboratories that support field research on the campus. These are also adequate for the foreseeable future. Many educational activities are conducted in the Carriage House, which will need some attention to maintenance during the next few years.

None of the facilities at the Cary Institute incorporates major "green" building efficiencies or renewable energy in its operations. A major fund-raising opportunity exists to provide green "retrofits" to our facilities, which would increase the efficiency and decrease the expense of our operations and, at the same time, demonstrate new approaches and capabilities to the public. We are always in search of cost effective ways to bring improvements to our facilities.

Elsewhere on the campus, the Cary Institute maintains a variety of former farmhouses, of varying size and quality, which are available for long-term lease to permanent staff or for short-term housing for visiting staff and students, who are typically present during the summer months. These buildings have been well maintained by the Institute's staff, but they present a variety of ongoing, often unexpected, maintenance problems.

Given its isolated location, it is appropriate for the Cary Institute to provide housing for visitors and students, who might otherwise have difficulty finding affordable housing in the local market. Currently 52 beds are available on the campus, although some are double rooms. While this falls short of demand when the Institute hosts major conferences, the Institute should maintain housing that meets the annual average maximum demand, rather than attempting to accommodate occasional peaks above that level. If the Cary Institute were to construct a cluster of efficiency apartments near the core science buildings, the motivation should be: 1) to reduce ongoing maintenance costs of many small isolated buildings, and 2) to reduce operating costs through green efficiencies, rather than to increase the total amount of housing available.

One venerable structure on the Cary Institute campus is Gifford House. Dating to 1817, this colonial brick house of 5,655 square feet is not currently in use. Its location, approximately ½- mile from the main entrance to the Cary Institute, does not provide ideal office space for Cary staff, who felt isolated when they were located there in the past. At the same time, zoning and fire-codes restrict the number of potential alternative uses of Gifford House, although at great

expense, it could be renovated to provide additional housing for visitors. The best use of Gifford House may be to provide office space for cooperative, non-profit partners in the environmental field, perhaps regional or departmental offices for The Nature Conservancy, the Natural Resources Defense Council, or Scenic Hudson.

Information Technology

Given the rapid pace of innovation in computation and communications science, it is difficult to project our needs in these areas, beyond a couple of years. (Who would have imagined what the iPhone has done to telecommunications within just a few years!) Currently, the scientific staff feels well-supported by our existing IT capabilities. We will continue to monitor cost efficient ways to meet the changing needs of our scientists and postdoctoral associates. We are increasing our wireless capabilities throughout the campus and improving remote access for our staff. The National Science Foundation now insists that scientific data and the explanatory "meta-data" that accompany them are available on the Internet. Within the past year, we have produced a formal data-management plan for the Institute's grant-supported research, and we maintain our data on servers at the Cary Institute. Our current servers are also adequate to maintain on-site communications and email, but an increasing role for Facebook®, Twitter®, and other social media sites may demand frequent reevaluations of our Internet presence.

A recent strategic evaluation shows the library at the Cary Institute functioning as a gateway to an increasingly wide scientific literature and data available through the Internet. Hard-copy journal subscriptions are likely to all but disappear, but the library will continue to serve as a historical repository for scientific books and monographs.

Grounds

The Cary Institute owns approximately 2000 acres of land in the Towns of Washington and Pleasant Valley, largely derived from the original estate of Mary Flagler Cary (Figure 1). Once farmed, much of this landscape now harbors secondary forests, regrowing on cleared land. A variety of natural habitats are available for scientific research, including mature deciduous and coniferous woodlands, wet shrublands, wetlands, streams and ponds. Current research projects on the Institute's lands include several studies of ticks and Lyme disease, studies of bird communications, studies of the effect of air pollution on forests, and studies of the impact of the woolly adelgid on hemlock populations. The Cary Institute maintains an Environmental Monitoring Program, which has long-term records of climate, air quality, and solar radiation (http://www.caryinstitute.org/emp.html), and we have long-term records of streamwater chemistry in the East Branch of Wappinger Creek. The long-term monitoring program has provided data for a variety of publications.

The Institute's grounds are the frequent destination of local residents, who use the trails and paved roads for walking, jogging, and biking. The local bird club has regular field trips on the grounds. We estimate daily visitation at >4,000/year from these activities during the 7-month period when the grounds are open to the public. In addition, each fall, the Institute conducts a controlled hunt to manage the size of the white-tail deer population on the property. Other hunting and fishing activities are also available.

The Cary Institute sees a substantial opportunity to improve public understanding of ecosystem science by enhancing existing and creating new trails, with interpretive kiosks, crossing various areas of the property. This series of nature trails would be under the purview of the newly-proposed Research Naturalist, who would develop the program in cooperation with the scientific staff and the communications department. The interpretive programs would emphasize the importance of ecosystem-level science through the lens of current research at the Cary Institute. Thus, the program at the Cary Institute would not simply be the equivalent of another state park, but rather, our grounds would help explain the science we do.

During the past several years, the Institute has sold one parcel of land that was isolated from its main holdings and acquired two new parcels when these became available. Currently, one outlying parcel is a candidate for sale, and we remain interested in acquiring in-holdings and adjacent parcels that complement the existing lands and our mission with them. A guiding principle should be to balance the costs and acreage of acquisitions and divestitures and to reduce perimeter as we add to core areas.

Development

(Note, a large portion of this material derives from the Strategic Plan for Development drafted in the spring of 2011, and abstracted here)

At the moment, the Cary Institute derives about 90% of its annual revenue from two sources—earnings on its endowment, which provides general operating support for salaries, facilities, grounds and administration, and grants from government agencies, largely from the National Science Foundation, which supports individual research investigations (Table 2). The remaining portion of its funding stems from private, philanthropic gifts, which allow the Cary Institute to pursue specific initiatives in public outreach and education. We believe we can be more successful in raising this level of private philanthropy. While philanthropic gifts to many nonprofit groups have declined during the past several years of weak economic conditions across the nation, we can expect interest in philanthropic giving to begin to rise again, coincident with economic recovery. This will benefit The Cary Institute given the growing recognition of its programs.

Both regional and national communications efforts are essential to an enhanced development program for the Cary Institute. While such outreach and systematic follow up are essential to meet and cultivate new friends, it is not likely that public events themselves will lead to major new revenues to the Institute. It will take careful and concerted efforts to match our

needs to the interests of private donors and foundations, which we will approach in a carefully coordinated effort.

We have a goal to raise $800,000 annually from individuals by 2017, ramping up from our current level of ~$550,000. The first tenet of any development program is to enlarge our circle of philanthropically-minded friends at the upper level, largely by engaging them in the importance and timeliness of our science. This is best done by engaging donors with our scientists—at private luncheon briefings, on field trips, and at public lectures by our staff. We will arrange special visits for promising individuals to see the Cary Institute and its science first hand. We will call on board members to make introductions when appropriate.

Additionally, we plan to expand the revenue sources for the Cary Institute by expanding the effort and success of fund-raising activities into new realms—especially private foundations. Above the $25,000 level, both individuals and foundations respond best to specific programs, projects, and initiatives, rather than requests for general operating support. A large number of foundations support work in the environmental area, ranging from those with multi-billion dollar endowments (e.g.: Gordon and Betty Moore Foundation) to smaller regional and family foundations. We need to cultivate relationships with a set of 12-15 promising foundations, so that we can approach them with requests to fund specific proposals during the next 3- 5 years. We also see partnerships, in which the Cary Institute supplies science to environmental advocacy groups, such as EDF, NRDC, and Southern Environmental Law Center, as a productive model.

The key is to dovetail new scientific endeavors into our traditional focal areas, so that we can build upon existing strengths as we expand our programs. For instance, the recent work by Dr. Charles Canham on using woody biomass as a substitute for coal in electric power plants builds on his career of work to understand what controls the regeneration and growth of forests following disturbance. People who don't support (or understand) basic scientific research may be more inclined to support work that relates to real-world problems—in this case the provision of energy for human society. Overall, we believe that donors will want to contribute to the Cary Institute because they recognize and value the importance of excellent science that can be brought to policy makers, without bias, beyond recognition that it is the healthy function of natural ecosystems that sustains us all.

Finances

The Cary Institute is fortunate to possess a sizeable endowment, totaling $93.6 million at year's end 2011. Our protocol for drawing on the endowment (5% of the 5-year rolling average) yielded revenue of about $4.8 million in FY 2012. The endowment is invested in a varied portfolio that is managed by Hall Capital Management with oversight by the Investment Committee of the Board of Trustees. Since the large infusion of endowment funds accompanying the dissolution of the Cary Trust in 2009, the endowment has earned an 8.9% annualized return.

Projecting this forward is difficult, however, because of the current volatility in the financial markets globally.

The second largest source of non-restricted funds for the Institute is indirect costs from grant expenditures, which supplied approximately $1.1 million in FY 2012 (Table 3). Our budget projections include modest increases in indirect cost recovery over the next 5 years, adjusted for staff size and assuming grant success similar to past years and inflationary increases in grant amounts. There is considerable uncertainty in future grant funding, however, because of expected federal cutbacks in research funding and changes at the National Science Foundation that may make it harder to apply for grants. Adjusting the revenue portfolio to include new sources of grant income, including private foundations and a wider range of government science programs in addition to NSF, is a high priority for the Cary Institute as it moves forward.

Table 3 summarizes the projected budgets for the Institute through 2017, assuming a business-as-usual scenario with the number of permanent scientific staff declining to 12 through anticipated retirements. Costs for the initiation of a new postdoctoral program are not included. For these budget projections we assume a modest growth in development income of 7-8% per year. We also assume 3% increase per year in income from other sources. On the expense side, the projections assume a 2.5 to 3% increase during the next 5 years in nearly all expenses due to inflation.

Table 3 shows that, while the FY13 budget is in balance, budget deficits are projected to increase from $5,000 in FY14 to $170,370 in FY17 as inflation outstrips the increased revenues available from endowment growth and indirect cost recovery. This projection indicates that under this business-as-usual scenario, the budget will be tight at the Institute for the next five years, and that we will need to identify new savings in the program or new sources of revenue to keep the budget balanced.

There are other expenses looming on the horizon that are not included in this budget projection. These expenses include funding the costs of the new scientific staff, for which attracting top talent will require competitive salaries and start-up funds, and funding capital improvements to our aging facilities. The current budget projections include only a small capital improvements line and no budget to equip new scientific staff. Building our reserve funds will provide funding for each of these purposes.

Envoi

We began this plan with the question: what can the Cary Institute do that is different, and better, than the activities of the vast number of faculty at colleges and universities who study the environment? The Cary Institute cannot simply be another career destination for bright environmental scientists who might otherwise be found in a traditional university environment of teaching and research. Its substantial financial endowment puts the Cary Institute in a unique position, which it should exploit to the fullest extent possible. Thus, the research at the Cary Institute should focus on those problems which are not likely to be well addressed within a university environment, either because they are too political, too complicated for rapid response, or not likely to be funded through traditional extramural sources. Many of these problems require applied, rather than basic, science. Our impact will be greatest when the Cary Institute can fill those needs, with excellent science, clearly articulated, and delivered in a timely fashion, without bias.

What makes the Cary Institute different is our ability to provide science that responds to national needs and to translate, transmit and deliver it to those who need it. The world of higher education is littered with failed attempts to supply science for immediate national needs, which is what we can do best.

Table 1. Comparative metrics of the Cary Institute and its peer organizations, 2002-2011

Institution	Number of scientists	Number of publications	Publications/scientist	Number of citations	Citations/scientist	Mean citations/article	*h*-index
Cary Institute	16	658	41.1	18,252	1141	27.7	64
Ecosystems Center (MBL)	11-12	437	38.0	10,789	938	24.7	54
Division of Ecology and Evolutionary Biology (Cornell)	27	978	36.2	20,670	766	21.1	63
Nicholas School of the Environment (Duke)	105	1827	17.4	30,381	289	16.6	73
Odum School (Georgia)	30	1250	41.7	18,445	615	14.8	55
Archbold Biological Station	5-6	157	28.5	1,666	303	10.6	22
Joseph W. Jones Center	9	165	18.3	1,475	164	8.9	22

Table 2. Major sources of recent grant funding for the Cary Institute. Table includes all grants with start dates between 1 Jan 2007 and 1 Oct 2011. Sources are listed individually if they contributed more than 1% of grant income for the period.

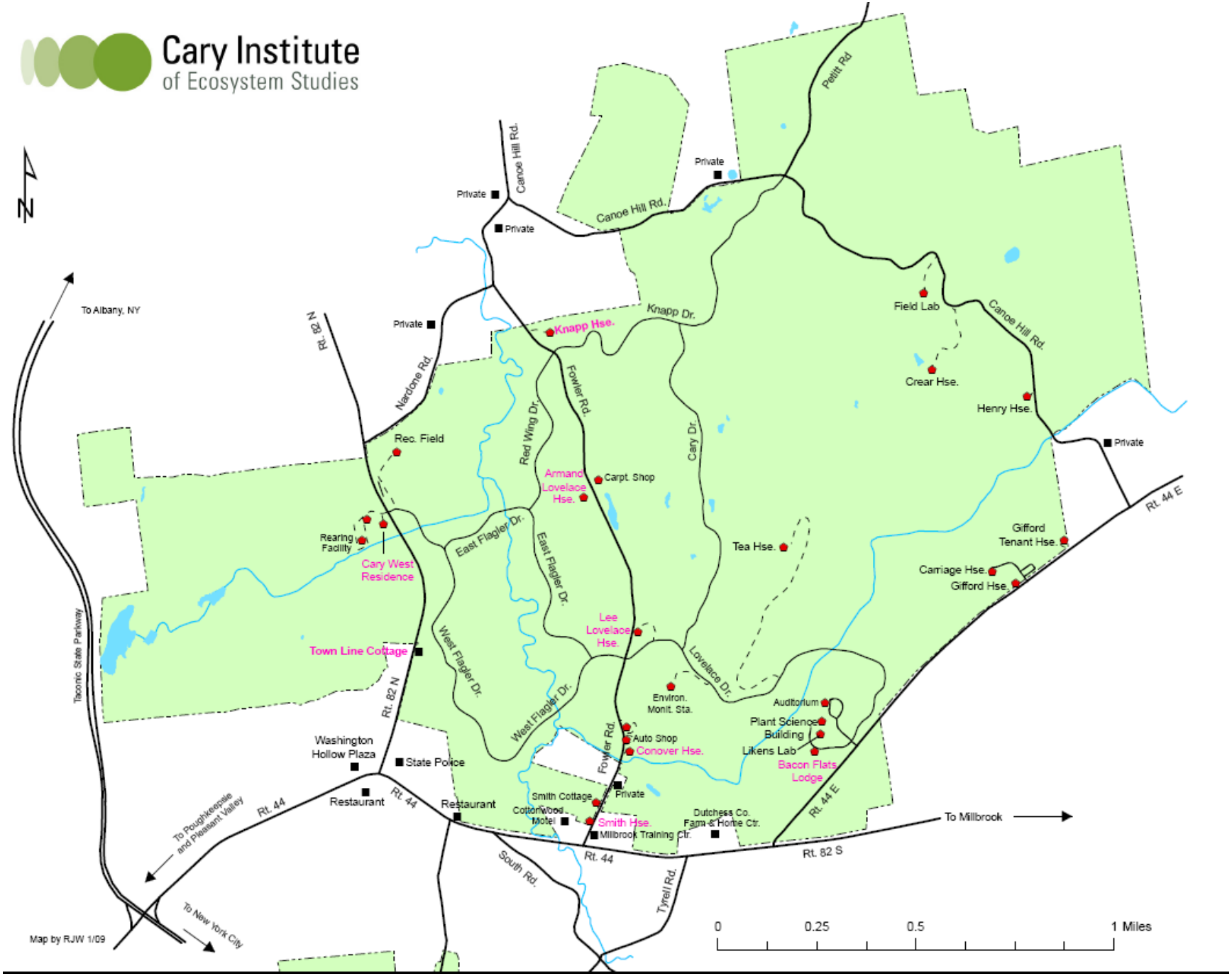
Source	**Amount**
Federal	
National Science Foundation	$18,007,809 (73%)
Environmental Protection Agency	$1,156,492 (5%)
Department of Agriculture (including Forest Service)	$876,287 (4%)
Centers for Disease Control	$828,068 (3%)
National Institutes of Health	$339,017 (1%)
National Oceanic and Atmospheric Administration	$322,264 (1%)
Other Federal	$277,397 (1%)
Non-Federal	
Hudson River Foundation	$658,705 (3%)
Natural Heritage Trust	$275,857 (1%)
Other Non-Federal	$2,072,368 (8%)
Total	**$24,814,264**

Table 3. Budgets and projected budgets for the Cary Institute, 2012-2017

Strategic Plan 2012 - 2017

	FY 12 Budget	FY 13 Proposed	FY 14 Projections		FY 15 Projections		FY 16 Projections		FY 17 Projections
Revenues									
Endowment Contribution (net of fees)	$ 4,834,255	$ 4,664,430	$ 4,723,587	1%	$ 4,770,823	1%	$ 4,818,531	1%	$ 4,866,716
Direct Costs from Grants	3,979,614	3,164,735	3,259,677	3%	3,064,096	-6%	3,156,019	3%	2,966,658
Indirect Costs	1,120,182	1,080,940	1,113,368	3%	1,049,949	-6%	1,081,447	3%	1,011,174
Education Revenue and Fees	22,000	25,000	25,750	3%	26,523	3%	27,318	3%	28,138
Interest	5,000	2,000	2,000	0%	2,500	25%	2,500	0%	3,000
Development	550,000	600,000	650,000	8%	700,000	8%	750,000	7%	800,000
Auxiliary Enterprises	105,000	108,000	111,240	3%	114,577	3%	118,015	3%	121,555
Miscellaneous	5,000	5,000	5,000	0%	5,000	0%	5,000	0%	5,000
Total Revenues	$ 10,621,051	$ 9,650,105	$ 9,890,622		$ 9,733,468		$ 9,958,830		$ 9,802,241
Expenses									
Scientific Research and Training	$ 2,088,076	$ 2,112,244	$ 2,164,050	2.5%	$ 2,112,581	-2%	$ 2,175,959	3%	$ 2,117,637
Direct Costs from Grants	3,979,614	3,164,735	3,259,677	3.0%	3,064,096	-6%	3,156,019	3%	2,966,658
Education Science	141,080	144,892	148,464	2.5%	152,918	3%	157,505	3%	162,230
Public Programs, Outreach and Visitation	227,255	238,840	244,711	2.5%	252,053	3%	259,614	3%	267,403
Finance and Administration	1,992,590	1,959,224	2,007,305	2.5%	2,067,524	3%	2,129,550	3%	2,193,436
Development	275,599	269,328	275,962	2.5%	284,241	3%	292,768	3%	301,551
Library	220,705	203,958	208,957	2.5%	215,226	3%	221,683	3%	228,333
Physical Plant	991,359	953,091	976,518	2.5%	1,005,814	3%	1,035,988	3%	1,067,068
Grounds	185,813	175,130	179,433	2.5%	184,816	3%	190,360	3%	196,071
Board and Committee Expenses	30,515	16,300	16,708	2.5%	17,209	3%	17,725	3%	18,257
Auxiliary Enterprises	40,825	58,509	59,971	2.5%	61,771	3%	63,624	3%	65,532
NYSERDA Projects - Loan Payments	28,764	-	-		-		-		
Endowment Repayments	99,355	99,355	99,355	0.0%	99,355	0%	99,355	0%	99,355
Transfer to Reserves	70,000	20,000	20,500	2.5%	21,115	3%	21,748	3%	22,401
Capital Improvements/ Reserves	169,500	154,500	158,288	2.5%	166,202	5%	174,512	5%	183,238
Merit Pool	80,000	80,000	81,970	2.5%	84,429	3%	86,962	3%	89,571
Total Expenses	$ 10,621,051	$ 9,650,105	$ 9,901,868		$ 9,789,348		$ 10,083,372		$ 9,978,741
Surplus/(Deficit)	0	$ (0)	$ (11,246)		$ (55,880)		$ (124,542)		$ (176,500)

Figure 1. Property and Housing Map


Cary Institute
of Ecosystem Studies
N
To Albany, NY
Taconic State Parkway
Rt. 82 N
Nardone Rd.
Private
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Petitt Rd
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Knapp Hse.
Knapp Dr.
Field Lab
Canoe Hill Rd.
Crear Hse.
Henry Hse.
Private
Rec. Field
Red Wing Dr.
Fowler Rd.
Cary Dr.
Armand Lovelace Hse.
Carpt. Shop
Rearing Facility
Cary West Residence
East Flagler Dr.
East Flagler Dr.
Tea Hse.
Gifford Tenant Hse.
Carriage Hse.
Gifford Hse.
Rt. 44 E
Town Line Cottage
West Flagler Dr.
Lee Lovelace Hse.
Lovelace Dr.
Environ. Monit. Sta.
Auditorium
Plant Science Building
Likens Lab
Bacon Flats Lodge
Rt. 82 N
Fowler Rd.
Auto Shop
Conover Hse.
Washington Hollow Plaza
State Police
Restaurant
Rt. 44
Restaurant
Rt. 44
To Poughkeepsie and Pleasant Valley
Smith Cottage
Cottonwood Motel
Smith Hse.
Millbrook Training Ctr.
Private
Dutchess Co. Farm & Home Ctr.
Rt. 44 E
To Millbrook
Rt. 82 S
Rt. 44
South Rd.
Tyrrell Rd.
To New York City
Map by RJW 1/09
0
0.25
0.5
1 Miles