



# NORTH CAROLINA Museum of Natural Sciences

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## MEMORANDUM

TO: Members of the Joint Legislative Commission on Governmental Operations

FROM: Philip Carter, PhD  
Chair, Advisory Commission, NC Museum of Natural Sciences

RE: Advisory Commission, NC Museum of Natural Sciences  
Report FY 2014-2015

DATE: October 14, 2015

### Introduction

On behalf of the State-wide membership of the Advisory Commission, and in accordance with General Statute §143B-344.21, the Advisory Commission of the North Carolina Museum of Natural Sciences ("the Museum") is pleased to submit this annual report of its observations and recommendations.

At the outset, I draw your attention to our appreciation for how the new State Budget has assisted the Museum and to the details of two extremely alarming, potentially fatal, risks to visitors and public servants which command your immediate attention please.

Above all, everyone should take considerable pride in the fact that this remarkable resource has come to be known as one of the most remarkable institutions of its kind in the world.

*I have not stopped telling everyone what an incredible museum you have in Raleigh and how it is so much a model for what other museums should be doing ... Please give my sincerest thanks to your most marvelous staff. Everyone was interesting and informative, and so clearly passionate about their work, for which the obvious enthusiastic responses of your visitors must be a very welcome payback.*

Harold Closter, Director, Smithsonian Affiliations  
August 7, 2015

Before reporting on the successes, achievements, and challenges of the North Carolina Museum of Natural Sciences over the past year, I would like to preface the report with a commentary on the leadership of the director, Dr. Emlyn Koster.

Over two years ago, the search committee faced the daunting task of replacing the retiring director, Dr. Betsy Bennett. A civic activist and science educator from Charlotte, her contributions to our State through more than two decades of masterful leadership of the Museum were of such impact that she was recognized last year with the North Carolina Award. To maintain the momentum, the search committee sought a senior museum administrator of experience and depth and successfully recruited Emlyn Koster, PhD. After almost two years of working closely with Dr. Koster, I am of the opinion that we have been fortunate indeed to have recruited him. His maturity, knowledge, and experience have been evident to me time and again in his management of personnel, creativity, energy, and ability to interact with the Museum's varied constituencies. What has impressed me the most has been his early and continuing engagement of staff at all levels. With one exception, he has been able to keep the talented and dedicated senior and junior staff he inherited and has proven himself to be open to suggestions and ideas from all while gaining support for his own initiatives or amending them as appear prudent based upon suggestions or critiques. (The one senior staff member lost, whom he worked hard to keep, left for an attractive senior position in San Francisco.) It has been my pleasure as the chairperson of your Advisory Commission to work with Dr. Koster since his arrival in North Carolina; the Museum's successes reported in my letter of last year and those below are mostly attributable directly or indirectly to his efforts.

### **Reminders**

The Commission's 2012-13 report emphasized the Museum's forward-looking leadership, the vibrancy of its research and educational mandates, and exceptional benefit-cost performance in comparison to twelve mission-similar US museums. The Commission recognized that while this operational efficiency is certainly impressive, cumulative State appropriation cuts have left the Museum with a funding level lower than before the Museum added its frontline, staff-intensive Nature Research Center wing. Over the same period, the Museum increased its community volunteerism to an almost national-record annual level of 67,000 hours and intensified its liaison with the nonprofit Friends of the Museum towards higher earned and contributed revenues.

The Commission's 2013-14 report emphasized the Museum's surge into national and international spotlights with the nation's top medal for outstanding community service by a museum and through hosting large (1,500+ attendees) conferences in biological research and across the nature and science museum field. Also emphasized was the Museum's alarming operating budget situation with relentless year-after-year cuts by stating "the upkeep of the State's #1 public sector attraction is falling below the expectations of what has been proudly established and positioned as a world-class research and educational resources as well as a major economic driver ... Across the US, museums with comparable attendance, impact and stature have annual operating budgets \$5-10 million higher than the NC Museum of Natural Sciences".

During 2015, the Commission met on February 6, May 12, and August 4. To ensure synergy across the Museum's governance and community linkages, the Friends Board President and Advisory Commission Chair continue to participate in each other's meetings. Every opportunity is taken to provide Commissioners with an orientation to the Museum in the form of a sampling of its assets, staff, achievements, mission-advancing opportunities, budgetary and other challenges, and its flow of new developments and profiles. Even by those who thought they knew the Museum well, the universal reaction has been amazement over a State resource that deserves to be widely known for its exemplary efficiency and abundance of valuable contributions.



### **Extraordinary Achievements**

The year began with powerful endorsements in WALTER magazine and the TRIANGLE BUSINESS JOURNAL:

*It seemed the best way for WALTER to tell the story of a place so big, dynamic, and complex would be to become a fly on its walls. To spend a day in the life of the people who work there, and tell their stories. That day turned into a day and a half, and could easily have become a month. In the process, we learned that the museum is far more than the sum of its parts, and that the many, varied people who work there share a common purpose. Each scientist, administrator, veterinarian, researcher, intern, and educator we met was passionate – not just about his or her own field, but about inspiring the public to know about – and care about – the natural world. Each believed it is an important calling, and one with serious implications. Together, they made it as clear as an October day: the NC Museum of Natural Sciences hopes to make this a better world.*

On a Global Stage: A Day in the Life of the NC Museum of Natural Sciences  
Liza Roberts, Editor & General Manager, WALTER Magazine  
October 2014, Special Edition

*The North Carolina Museum of Natural Science has positioned itself as a premier destination at the forefront of the United States' science community. In the past month, science events at the museum have drawn in \$2.28 million in economic impact in Raleigh, reports the Greater Raleigh Convention and Visitors Bureau. More than 1,700 delegates representing 42 countries attended the Association of Science-Technology Centers' annual meeting in October. Earlier in the year, the museum hosted Evolution 2014, a symposium on topics related to evolution, which drew around 2,000 attendees from 38 countries. While the economic impact of ASTC is significant to Raleigh's economy, the overall success of the conference helps to solidify that the North Carolina Museum of Natural Sciences is at the forefront of science education and programming," says Dennis Edwards, president and CEO of the Raleigh Convention & Visitors Bureau. "When one of our signature museums, in terms of leisure visitation, is also one of the country's signature museums for the professional science community, it helps position our entire area as a hub for work and play.*

N.C. Museum of Natural Science takes the stage in global science community  
Dawn Wallace, Triangle Business Journal  
November 28, 2014

**During the past year, the NC Museum of Natural Sciences continued to augment its role as a significant and unique helping hand to the State's quality-of-life, environmental and science literacy, education and workforce, and economic growth. The Commission draws the following sample of recent highlights to your attention:**

- Raleigh:
  - #1 museum ranking and #1 all-attraction ranking by TripAdvisor
  - 70,000+ hours (equivalent to 34 FTEs of \$1.6 million at \$23.07/hour) in 2014-15 of community volunteerism, one of the highest totals of any museum in any city across the US
  - Museum's Director selected as the recipient of the 2015 Thad Eure Jr. Award, the capital's top award to recognize the economic impact of an individual and/or an organization as well as one on the City's "smart and creative innovators ... rooted in Raleigh" in the new promotional campaign by the Greater Raleigh Convention and Visitors Bureau (<http://www.visitraleigh.com>)

- State:
  - Host of NC-wide STEM Career Showcase for Students with Disabilities ([https://www.youtube.com/watch?v= SyY6zW9qTc](https://www.youtube.com/watch?v=SyY6zW9qTc))
  - Partnership with NC Wildlife Resources Commission to use the Museum's research expertise in monitoring wildlife movements through 'camera traps' for statewide understanding of coyote and deer populations with school students as 'citizen scientist' assistants
  - As enabled by a visionary State appropriation and working with a local nonprofit Friends board, first museum in the State to develop an indoor-outdoor learning space about nature in rural underserved communities for children in school and family settings, starting in Whiteville, Columbus County
- Nation:
  - #1 choice in NC in MSN's nationwide survey of the nation's 50 best free or cheap museums (<http://www.msn.com/en-us/travel/budget/cheap-or-free-museums-in-all-50-states/ss-AAf919a?ocid=DELLDHP>)
  - Participant in Blue Star Program of the National Endowment for the Arts providing special welcomes to members of the US military and their families
  - First museum to be funded by the US Secretary of State as a "global ambassador and cultural diplomat" helping natural history museums in India and Mexico to track their local wildlife for community learning and resulting in international staff exchanges
- World:
  - First museum to develop a digital app (<http://naturalsciences.org/NC-NatSci-App>) that enables hearing and vision-impaired visitors to navigate and learn from all galleries
  - Museum's Director invited as one of 20 members of a global working group appointed by the International Council of Museums to update the definition of 'museum'
  - Numerous contribution to the advancing state of knowledge about prehistoric and living biodiversity

**These and other stellar achievements are feasible because of a unique array of incredible expertise in a service-driven team environment, profoundly dedicated to the Museum's mission of illuminating the interdependence of nature and humanity.** The Advisory Commission commends Dr. Koster's senior team wherein he is joined by Debra Gardner and Dr. Jason Cryan as Deputy Museum Directors, by other Section Chiefs Bob Flook, Roy Campbell, Liz Baird, Luanne Pendergraft and Charles Yelton, and indeed by the entire organization of full-time staff, part-time staff, volunteers, and interns for their collective focus and results. Also, the Museum's exemplary working relationship with the Friends of the NC Museum of Natural Sciences must be noted.

**The Museum is 'a learning organization' as defined in business literature, one used to continuous improvement with efficiency ('doing things right') and effectiveness ("doing the right things') in dual focus. As a further optimizing step, the Museum has recently added to its strong array of partnerships across the UNC System with the Poole School of Management as a *pro bono* source of professional development seminars and business process improvement studies.**

**With 930,458 onsite visitors (such annual visitation ranks this Museum among the most popular destinations in relation to host city population across the US) in 2014-15, the cost of the NC Museum of Natural Sciences is now just \$1.16 per NC taxpayer. At the Museum's Prairie Ridge Ecostation, just four full-time employees and 56 volunteers served 36,000 visitors, manage 45 acres of reconstructed wildlife habitat, provide programs for 7,500 students, and host 40 ongoing research and**



citizen science projects. At the Museum's new branch in Whiteville (population 5,400), Columbus County (3<sup>rd</sup> largest, population 58,000), indoor and outdoor educational experiences for young children in school and family settings are delivered per capita at less than the cost of the cheapest tablet computer or science textbook.

### **Challenges of Achieving High Impact with Reduced Resources**

**During 2014-15, the Museum reached its absolute limit of doing more with less.** All feasible measures were taken to combine critical functions under fewer positions and move vacant FTEs to functions of greater need.

The Museum's extraordinary productivity is illustrated by examples of program delivery, which, in turn, also pose vexing operational challenges. Here are three illustrative examples:

- The largest one-day museum event of its kind in the country, our annual BugFest event on September 19 again attracting 30,000+ visitors
- Although staffed educational spaces adjacent to exhibit galleries continue to be very popular – e.g. 180,000+ visitors were again counted in our small live-butterfly conservatory last year – the Museum has already been obliged to reduce their access hours within the overall public schedule
- When the Museum confined its open-until-9pm Science Thursdays to only the Nature Research Center wing as an economizing measure, efforts to enrich the visitor experience in Investigate Labs, Naturalist Center and through cart programs resulted in doubled attendance!

Responding to reductions in its operational budget in each recent fiscal year has been exponentially more difficult for the Museum to address. These funding cuts, significantly restricting the ability of staff to effectively deliver programs and services for which the Museum has been so positively recognized, have had a demoralizing effect on an enthusiastic but seriously overworked staff, many of whom are forced to seek secondary employment to make ends meet.

The net result is a seriously underfunded and overstretched organization. The State appropriation for this largest and most visited of State Museums has dipped below 70% of an increasingly diversified funding base, itself unreasonably low, and at an unreasonably fast rate of decline. As well, the Museum has approximately 75 exhibit and program areas, many of them interactive, on five floors to maintain with scientific correctness and in reliable working order, but it is perceptibly slipping behind in its abilities to do so. Further exacerbating the Museum's overall situation is a lengthening list of deferred maintenance needs, each one also critical for maintaining the expected quality of a world-class museum.

### **Profound Appreciation**

**The Commission greatly appreciates the stabilization of appropriation funding in the State's 2015-17 Budget. The Commission also wishes to commend the State on the visionary formation**

**of the new Department of Natural and Cultural Resources, on the formalization of the Museum's branch in Whiteville, on the new assignment of responsibility for the 'Grassroots Science Museums' to the NC Museum of Natural Sciences, and on new 'dynamic pricing' and 'special fund' provisions.**

- Concerning the new Department of Natural and Cultural Resources, we think the potential to leverage NC's heritage as an even greater asset to attract new business investments is strong as is the potential of systematic liaison with preK-12 education, tourism, service to those with disabilities, and workforce development.
- Concerning the Museum's new branch in Whiteville, we have witnessed an extremely positive proof-of-concept unfold that is already uplifting the horizons of the community and its citizens, especially its young citizens.

*In a county where 41% of children live below the poverty line and many families must choose between gas money and groceries, having the Museum of Natural Sciences in our county seat is life changing for many of our young children and their families ... We are a relatively small community in terms of numbers, but we are great in our potential. Just look in the eyes of every single child here today and you will see the promises of tomorrow. Some may wonder if the expense of a new museum in such a small town is worth the price, but I can say with much confidence, there is no greater place to invest in than a small town. Our tiny community and others like us give children the safety of many helping hands, the accountability of small numbers, the support of strong families, and the values of good Americans. Combine this with the NC Museum of Natural Sciences at Whiteville, contributions of the latest technology coming from the greatest minds, and our children have all the resources and support they need to make huge changes come from this small part of the world ... As our children are given the opportunity to express themselves and safely engage in their innate need for physical activity and mental stimulation, their self-esteem rises as they discover all they are capable of. Today's tummy-crawlers, happily exploring in their own safe environment, are tomorrow's microbiologists. Today's toddlers, banging pots and climbing trees, are tomorrow's engineers.*

Elise Belmont, President, Whiteville Play Group  
speaking at the opening of the Museum's satellite branch in Whiteville  
February 27, 2015

This initiative was invited to be documented for the benefit of the museum field at large by the editor of Informal Learning Experiences. Titled 'Bringing the Mission to the Community: State Museum opens a Satellite in an Underserved Rural Region', copies are available from the office of the Museum's Director, [cassandra.williams@naturalsciences.org](mailto:cassandra.williams@naturalsciences.org), 919-707-9802.

- Concerning the Grassroots Science Museums, the NC Museum of Natural Resources has a long and positive history of board involvement and institutional assistance to the NC Grassroots Science Museums Collaborative nonprofit organization. Planning discussions are already underway with the chair and all members of its board and first steps in liaison also with the Chief Deputy Secretary of the Department of Natural and Cultural Resources are already scheduled.

Concerning the State's additional direction that the NC Museums of History and Natural History jointly assess the feasibility and costs of charging admission fees, the Commission will communicate the results of its research and recommendations by the mandated deadline.

### **New Life-Risk Concerns and Recommendations**

#### **1. Spontaneous fracturing of exterior and interior window glass**

In fall 2014, exterior glass panes in the Green Square Complex—DENR and the Museum's Nature Research Center—started to show susceptibility to spontaneous breakage due to nickel sulfide impurities in certain batches of glass. The immediate contingency measure was to erect protective scaffolding around and below each street-facing window: *however, we must note that this measure opens the possibility of potentially fatal climb-and-fall incidents*. Then in winter 2014, interior glass panes in the Museum's Nature Research Center started to show the same alarming susceptibility. The first of these affected a balcony-edge glass barrier overlooking the atrium: This incident fortunately occurred at night and temporary protective barriers were erected before the next morning's public visitation: This measure does not eliminate **potentially fatal falls** through just-occurred breakages. The Department of Administration is looking at how to rectify these glass breakage problems, which are of a safety as well as an aesthetic nature. **That such an iconic public building—one visited by almost one million people annually, including several hundred thousand children—is wrapped in ugly scaffolding undercuts public confidence in government buildings. There is also the matter that Rocky Top Catering, which operates the Museum's Daily Planet Café, is being denied revenue from its closed patio; a portion of their profits contributes significantly to the support of the Museum.**

I have written to the Governor and spoken with the Secretary of the Department of the Administration. There has been follow-up at staff levels to explain what has been investigated and what solutions may be feasible.

**It is urgently recommended that this danger from interior and exterior glazing problems at the Museum and at DENR be resolved expeditiously in the dual interests of the public and public servant safety as well as public confidence in State buildings. I am gratified that Secretary Daughtride has responded positively to my request for help and has secured an emergency declaration which will be most helpful in expediting the remediation so desperately needed. Mr. Spero Fleggas, DOA Special Projects Consultant, has been most helpful and inclusive in moving things forward. As of this date, a plan and schedule for proceeding to all primary constituencies, is in place.**

#### **2. NC Statutes, Chapter 14, Article 55, Regulation of Certain Reptiles**

**The NC Museum of Natural Sciences has an unfunded legislative mandate to accept, provide care for, and potentially euthanize, confiscated venomous reptiles pursuant to Article 55.**

Privately held venomous reptile collections in North Carolina often contain deadly snakes from around the world. When NC law enforcement officials confiscate venomous reptiles from private collections, Article 55 specifies these confiscations to be brought to the Museum for housing and potential



euthanasia. However, without funding for this hazardous responsibility, the Museum has inadequate facilities; the containment area to process and house confiscations is a small, converted bathroom.

Earlier this year, the Museum's Living Collections staff (tasked with Article 55-related responsibilities) advised senior DENR officials of the serious and significant threat to staff health and welfare as related to Article 55 responsibilities. **There simply is no safe way to handle, care for, or euthanize a venomous reptile without appropriate facilities and without locally-available antivenom (also called antivenin), which for most confiscations there is none.** Citing this clear danger to health and welfare, Museum staff urged that all such confiscations be immediately transferred to a recipient equipped to safely deal with these animals, such as Alligator Adventure in Myrtle Beach, South Carolina, a licensed organization known to be professionally competent and willing to accept Article 55 confiscations. **As long as this legal matter remains unresolved, public servants at the NC Museum of Natural Sciences are either placing themselves at risk of death or obliged to break the law.**

**It is therefore urgently recommended that this danger from the Museum's unfunded mandate to handle and euthanize venomous reptiles be resolved expeditiously as a matter of law in the upcoming Legislative Session so as to eliminate the risk of public servant fatalities.**

#### **Additional Recommendation**

The 2012 Nature Research Center wing of the NC Museum of Natural Sciences—particularly the Daily Planet Café and Environmental Conference Center—are the parts of the Museum most frequented by State legislators and senior officials. However, their newness gives a misleading impression on the institution's overall resource level, dire shortage of part-time staff, pressures from intense public use, crowding of back-stage staff offices, and, overall, a perplexing climate that combines phenomenal dedication and results with some of the lowest salaries in any comparable museum across the US.

**I close by suggesting that State Legislators and senior officials seek every opportunity to visit the entire Museum with work colleagues and family members. You are also invited to call upon the Museum's Director (919-707-9802, [emlyn.koster@naturalsciences.org](mailto:emlyn.koster@naturalsciences.org)) to request a briefing or tour of any length. It is not widely known, for example, that the NC Museum of Natural Sciences contains a large indoor live animal collection used in conjunction with exhibits and onsite/offsite educational programs as well as has the State's natural history collection in a specialized facility in west Raleigh next to the Museum's Prairie Ridge Ecostation, itself well worth a visit as one of the closest natural areas to the center of Raleigh.**

Sincerely,



Philip B. Carter, PhD, Chair

Copies:       Members, Museum Advisory Commission  
                  Keith Poston, Board President, Friends of the Museum  
                  Emlyn Koster, PhD, Museum Director