

AMOS Recovery Plan

*RFP for Coronavirus State and Local Fiscal
Recovery Funds*

Asheville Museum of Science (AMOS)

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Application Form

Question Group

Buncombe County requests proposals for projects to help the community recover from and respond to COVID-19 and its negative economic impacts.

Buncombe County has been awarded \$50,733,290 in Coronavirus State and Local Fiscal Recovery Funds (Recovery Funding), as part of the American Rescue Plan Act. This infusion of federal resources is intended to help turn the tide on the pandemic, address its economic fallout, and lay the foundation for a strong and equitable recovery.

Buncombe County is committed to investing these funds in projects that:

- Align to county strategic plan and community priorities
- Support equitable outcomes for most impacted populations
- Leverage and align with other governmental funding sources
- Make best use of this one-time infusion of resources
- Have a lasting impact

Proposals shall be submitted in accordance with the terms and conditions of this RFP and any addenda issued hereto.

[Click here for the full terms and conditions of the RFP](#)

Coronavirus State and Local Fiscal Recovery Funds*

Name of Project.

AMOS Recovery Plan

Amount of Funds Requested*

\$295,000.00

Recovery Fund Eligible Category*

Please select one:

Small business and non-profit support

Brief Project Description*

Provide a short summary of your proposed project.

The Asheville Museum of Science (AMOS) respectfully requests consideration for funding in the amount of \$295,000 to support science literacy throughout our community. We will do this by: (a) addressing the impact of lost revenue due to COVID-19; (b) increasing our physical capacity to deliver top-quality science

education in a safe way; and (c) implementing a research-backed education model that both supports a more science literate community and addresses the clearly demonstrated ‘COVID slide’ learning loss in children.

AMOS is a widely respected resource that is heavily utilized by our schools, community organizations, local government, and tourists, providing hundreds of hours of formal and informal science education each year. The requested support is vital to maintaining and strengthening this asset for all residents of Buncombe County at a time when building a science-literate community that excels in STEM, critical thinking, and problem solving is more important than ever.

Project Plan*

Explain how the project will be structured and implemented, including timeframe.

This project will allow AMOS to recover from the financial impacts of COVID while building the capacity to remain a vibrant and resilient part of the Buncombe County economic and educational infrastructure. The multifaceted approach include the following components:

Rent (September, 2021): Prior to COVID, AMOS had consistently balanced budgets and a strong financial foundation, growing programming and outreach every year. With a net revenue loss of 70% during shutdown (from a FY2019 budget of \$800,000), AMOS must recover \$167,000 in owed rent. This will be paid immediately upon receipt of funds.

Space Repurposing (Completed by December, 2021): In order to serve increasing numbers of guests in a way that provides the flexibility to adhere to evolving safety and CDC guidelines now and in the unforeseeable future, AMOS will increase space by:

Relocating the Ticket Counter & Science Shop to a street-front location, increasing visibility and profitability of the Shop.

Repurposing the former Shop space to increase active exhibit space by 600 sq. ft. The new multi-dimensional exhibit will provide a scientific view of the impacts of COVID-19 through the use of global data displayed on a tool called “science on a sphere.” Exhibit wall content will present a series of illustrations including: The History and Science of Pandemics; How Science is Used to Cure & Protect Populations; Personal Stories of Triumph and Overcoming COVID-19; What Can You Do – Slow/ Stop the Spread of Diseases (personal health and safety); and What’s Next – Innovators and Problem Solvers of the Future. Content on the globe and walls is interchangeable and immersive. The exhibit can be brought further to life with speakers on specific topics — for example, from local innovators who supported the recovery through high-tech refrigeration — to provide students with a more immersive experience. In the future, this exhibit is able to be adapted to look beyond COVID for programming on emerging topics.

Education (Implemented Fall, 2021): Research from the McKinsey Report(1) indicates that the average learning loss (the ‘COVID Slide’) for students during the pandemic was 7 months (greater for lower income students and students of color—discussed further below.) AMOS will re-engage students through age-appropriate programs aligned with state standards in science, math & literacy. These programs are focused on helping students rebound from the ‘COVID slide’ and increasing both student engagement with science and interest in STEM careers. AMOS is uniquely positioned as the long-term trusted science education partner of Buncombe County Schools, as well as after school program providers like the YMCA, YWCA, and Avery Learning Center (among others), to provide these programs

By investing in AMOS at this time, when so much critical revenue has been lost and so much vital STEM learning must be recovered, Buncombe County is ensuring greater science education outcomes for its youth for the long term.

Statement of Need*

Describe the need that this project will address. Include data to demonstrate the need, and cite the source of the data.

This project is vital for AMOS to mitigate the impact of the financial losses from the COVID shutdown so that we can continue being the source our schools and community organizations count on for science education. Science education is essential for developing the technological literacy, problem-solving, and critical thinking skills Buncombe County students need to succeed in school — and beyond. These are lifelong skills that allow us to generate ideas, weigh decisions intelligently, and even understand the evidence behind public policy-making.

This is more important than ever as the pandemic revealed a significant need for a science literate community. The pandemic also caused significant learning losses for students that must be recovered. AMOS has the track record and partnerships to support this need, and teachers in our region rely on us for these supplemental learning experiences.

However, AMOS cannot meet the growing demand for museum admission and local school support without investment from our local leaders.

Despite the fact that 80% of jobs are expected to require STEM education by 2030(2), a study conducted by the National Math and Science Initiative indicates that only 36% of high school graduates are prepared to pursue a college-level science course(3). That was before the learning loss of COVID.

Science museums provide a far more service than simply increasing science literacy in students, raising test scores, and creating a more STEM-focused workforce. Facilities like AMOS also provide a valuable economic asset to their communities. Museums are also essential to the economy of the state and United States — generating GDP, stimulating jobs, and contributing taxes both now and in the future as the next generation grows(4). Municipalities worldwide have recognized the value of science museums as an economic asset they must invest in and celebrate.

Link to COVID-19*

Identify a health or economic harm resulting from or exacerbated by the public health emergency, describe the nature and extent of that harm, and explain how the use of this funding would address such harm.

This proposal will address both the economic harm to AMOS caused by COVID-19 and the long-term need for STEM literacy in our community.

Prior to COVID, AMOS served over 64,000 museum visitors, children on field trips, after school learners, students in in-classroom outreach programs, and summer and winter campers. The programs AMOS provides cannot be easily duplicated in schools, and AMOS educators possess the scientific background and expertise to deliver quality education.

AMOS complied with federal, state, and local orders, being closed to the public for more than 6 months. AMOS was able to reopen at 25% capacity in September, and is now operating at 40-50% capacity per CDC guidelines. Over the course of the pandemic, AMOS lost over 70% of total revenue (\$800,000 in 2019) and lost most of our staff. Although AMOS was successful in applying for PPP funds to be able to maintain full-time staff, many of our most essential Educator positions are seasonal and/or intermittent, and therefore were unable to be included in PPP funding. AMOS also was unable to qualify for other COVID relief funds like SVOG and EIDL due to the restrictions of those funds.

In addition to the financial loss, AMOS is also seeking to reduce the learning loss evident in children after a prolonged period of virtual instruction. AMOS has observed a significant degree of learning loss among students, and this effect has also been indicated through teacher feedback and early test scores. A growing body of research suggests that this learning loss may be much broader than previously thought.

Science and STEM education is more important than ever. The COVID pandemic has clarified the significant need for a science literate community. Understanding science is critical to preparing young people for the careers of the future, and essential to cultivating curiosity. Science and technology help humans of all ages understand critical issues so they can make informed decisions.

Population Served*

Define the population to be served by this project, including volume and demographic characteristics of those served.

Prior to COVID-19, AMOS was serving over 64,000 visitors. With the work proposed here, that number will increase while we continue to follow evolving safety guidelines. By 2022, we anticipate being able to serve 75,000 each year.

AMOS serves the entire community, and places emphasis on helping our schools reduce the science achievement gap. AMOS will reach students at risk by focusing recruitment and program delivery in neighborhood hubs at Title I schools, informal care settings, after school programs (including those at Avery Learning Center and the YMCA), and in the museum as COVID restrictions on youth continue to lift.

Activities are designed to appeal to youth of all ages and backgrounds, and to be more engaging than traditional classroom settings. Many of these programs use materials that can be found in any household or classroom (like rubber bands and plastic bottles), which makes these activities accessible and shareable. AMOS also provides access to specialized items (like materials to build an electric circuit), and experiences like exploring a portable planetarium connected to NOAA & NASA data.

AMOS educators enhance access through Culturally Responsive Teaching, a pedagogical approach that stresses incorporating student culture and social dynamics into the curriculum. One example of this at AMOS is a new 'Women In STEM' exhibit that will be showcased both within the museum walls and virtually. By highlighting the impact of women in traditionally male-dominated fields, including women of color, AMOS promotes inclusion by encouraging more children to picture themselves as scientists or engineers. AMOS also assures access by building relationships that support ongoing investigative pedagogy with teachers/caregivers. Each AMOS program assures success through a minimum of three touch points with teachers for program planning, execution, and follow-up, supporting a customizable series of education experiences tailored to an individual classroom's needs.

Results*

Describe the proposed impact of the project. List at least 3 performance measures that will be tracked and reported. If possible, include baselines and goals for each performance measure.

AMOS will measure the following key results:

The financial hardship faced by AMOS due to the COVID pandemic and resulting shutdown will be addressed by the payment of back-owed rent.

The museum's physical capacity will be expanded by:

Relocating the Science Shop to a more street-friendly location increases usable exhibit space.

Repurposing the current Shop location for additional exhibit space increases (1) the number of interactive exhibits for the public, and (2) the number of visitors AMOS can allow in each day while continuing to adhere to evolving health and safety guidelines. AMOS must continue to be a model of scientifically informed best practices when it comes to the health and safety of our community.

AMOS will work to close the achievement gap in STEM and grow the next generation of science-based innovators WNC. We will do this by:

Generating a full schedule of quality programming delivered by AMOS staff in house and in the community, serving at least 2,500 at-risk learners in their homes and schools, at least 5,000 more in field trips to the museum, and 600 in after school programs.

Minimizing the 'COVID Slide' and 'Summer Slide' by offering programs designed to help pre-K-8 students grow their science and math literacy and expand their interest in STEM exploration.

Track engagement impacts through both formal evaluation and informal observation. Our anticipated measurable outcomes include: 90% of students will report an increased interest in STEM; 75% of students report increased interest in a STEM career; 100% of students demonstrate an understanding of what STEM careers are; 65% demonstrate understanding of the State and Next Gen standard of learning addressed by each activity; 80% of teachers in formal classrooms and informal care settings report that they would

continue using AMOS lessons or create their own. We will use web analytics to measure the use of on-demand virtual resources (2020, our virtual resources received up to 3,000 hits per day.)

Evaluation*

Describe the data collection, analysis, and quality assurance measures you will use to assure ongoing, effective tracking of contract requirements and outcomes.

AMOS will be using a proven model that has been successful in national science centers, and in schools & community centers across Buncombe County. AMOS evaluates all programs on an ongoing basis utilizing the National Science Foundation (NSF) Framework for Evaluation Impacts of Informal Science Projects, evaluating: increases in student awareness, knowledge or understanding of STEM concepts, processes or careers; student engagement or interest and attitudes towards STEM-related topics or capabilities; behavior resulting from experience; skills based on experience; and more. We utilize a variety of data collection methods including but not limited to questionnaires, test scores, and surveys.

The proposed programs addressing the 'COVID slide' are based on existing best practices developed by studying the 'Summer Slide,' a well-known, widely researched phenomenon of learning loss occurring in students over summer vacations each year. This data has already been used to develop successful informal education models and programs following large scale disasters such as Hurricanes Katrina and Sandy.

Utilizing our robust Customer Relationship Management software (CRM) we also track the number of people served in the museum (to compare with pre-COVID numbers) and ask key questions after exhibit exploration to evaluate efficacy of the museum's exhibits.

Equity Impact*

How will this effort help build toward a just, equitable, and sustainable COVID-19 recovery? How are the root causes and/or disproportionate impacts of inequities addressed?

AMOS offers programs that create and sustain equitable access in high-quality STEM education. Economically disadvantaged students (especially children of color) in our community have been negatively impacted by an achievement gap that was well documented before COVID struck, and which has now grown. The McKinsey Report(1) indicates that the average amount of learning loss per student in December is seven months, but Black students are predicted to have fallen behind by 10.3 months, and low-income students by more than a year. The authors estimate this will exacerbate existing achievement gaps by 15 to 20%. It is urgent to intervene now to support vulnerable students. AMOS is ready to help deliver these very actions to halt COVID learning loss among vulnerable groups in Buncombe County.

The science achievement gap affects the future workforce of our region as well. Statistics from the NSF show women make up 50% of the college-educated workforce, but comprise only 28% of the science and engineering workforce. Black people, Hispanic people, and Native Americans make up 27% of the adult U.S. population – but only 11 % of workers in science and engineering occupations(5).

Numerous studies(6) have shown the correlation between informal science education outside the classroom and greater interest in and understanding of scientific concepts, particularly in demographics that are underrepresented in science fields. AMOS provides these opportunities for all students in Buncombe County.

From our Statement on DIVERSITY, EQUITY & INCLUSION: "We are committed to providing Science for All and using STEM as a tool to advocate for justice and equity. AMOS will help build and sustain a diverse and inclusive community, including dismantling barriers to full access and inclusion of historically underrepresented groups in the Sciences. AMOS will welcome environments and conditions where all people can reach their full potential."

Project Partners*

Identify any subcontractors you intend to use for the proposed scope of work. For each subcontractor listed, indicate:

- 1.) What products and/or services are to be supplied by that subcontractor and;
- 2.) What percentage of the overall scope of work that subcontractor will perform.

Also, list non-funded key partners critical to project.

AMOS (formerly Colburn) is a trusted partner for science education with schools, local government, and other organizations for over 25 years. We provide STEM content to schools, help teachers access and utilize STEM-related equipment, and have even worked with schools to create science clubs and STEM fairs to foster deeper connections to science learning.

For this project, our partners will be:

Oceanside and the Callen Center: supporting rent agreement and modifications to space

Ellumenati: Exhibit Design

NOAA and Ellumenati: Exhibit Content

Buncombe County HHS: COVID Exhibit Content

ASTC and NC Science Museum Network: Best practices and exhibit content

Construction Receiving Construction Bids and Scopes of Work from Vaden, Red Tree Builders, and Vannoy

AMOS aligns with Buncombe County's Strategic Priorities, and this project will support those goals. AMOS actively works toward these goals:

STEM Education and Science Literacy: Increase third grade literacy rates especially among underperforming students; Increase kindergarten readiness

Expand and maintain cultural and recreational assets

STEM Workforce Development: Improve college and career readiness; Increase total employment in region's targeted industries

Conservation of WNC Natural Resources: Reduce greenhouse gas emissions

We are also proud to partner with many organizations throughout WNC. These include but are not limited to: Asheville City Schools (including the IRL, CAYLA, and Head Start Programs), My Daddy Taught me That, Riverlink, GreenWorks, MountainTrue, Muddy Sneakers, Pisgah Field School, NC Wildlife Commission, UNC-A, Western Carolina University, the WNC Nature Center, and so many more. With funding sought by AMOS, we are also able to provide STEM education support to underserved communities at events like Homework Diners (with Buncombe County), Pop-up Science events at Rec Centers, events at Public Housing locations, and partnerships with agencies like Delta House and Green Opportunities.

Capacity*

Describe the background, experience, and capabilities of your organization or department as it relates to capacity for delivering the proposed project and managing federal funds.

AMOS has served the community of Buncombe County since 1960, when we opened as the Burnham S. Colburn Memorial Museum. Since moving to our new location in 2016, we have only grown our capacity to provide the highest quality science education.

When AMOS was forced to shutter in 2020, we demonstrated the flexibility of our teaching methods, and quickly transitioned to remote learning. In three months, more than 115,000 students were engaged with AMOS through online learning, including over 3,000 unique visitors each month. Our Educators developed dozens of hands-on lessons that could be delivered to homes and community centers as 'Science Kits,' and we transitioned our sought-after summer camp programs to be accessed online. We also created 'Daily Doses of Science' which were 5-min lessons that young science explorers could do at home, either outdoors or with common household items. These videos served up to 3,000 students daily.

AMOS now offers virtual classes for elementary classrooms, public libraries, and other community outlets, where as many as 70 children have engaged in STEM activities in live Zoom events. With support from Buncombe Co. Strategic Partnership Fund in 2020, AMOS delivered nearly 2,000 science activity kits and teacher instruction guides serving the entire fourth grade (85 classrooms) in Buncombe County Schools. Each kit included a video lesson that engaged students with an essential topic based on NCSCOS content; a complete set of materials for every student to engage a learning challenge; a guided student handout; and a teacher's guide that reflected state learning standards. Teachers received these kits via school courier, then delivered to students either in person in classrooms or via school pick up to complete at home.

AMOS has a proven track record of serving Buncombe County's schools and families, and is a trusted source of science education for our community. Now more than ever, the need for strong science education is clear.

Budget*

Provide a detailed project budget including all proposed project revenues and expenditures, including explanations and methodology. For all revenue sources, list the funder and denote whether funds are confirmed or pending. For project expenses, denote all capital vs. operating costs, and reflect which specific expenses are proposed to be funded with one-time Buncombe County Recovery Funds.

Download a copy of the budget form [HERE](#). Complete the form, and upload it using the button below.

AMOS Recovery-Funds-budget.xlsx

Special Considerations*

Provide any other information that might assist the County in its selection.

AMOS provides formal and informal education opportunities based on state standards of learning requirements that support our schools in achieving higher outcomes for our students in the sciences. Our schools rely on for this resource.

During the COVID shutdown, our Educators developed dozens of hands-on lessons that were delivered to homes and community centers as 'Science Kits' along with many other programs delivered online. Here are just some of the things local teachers had to say about our COVID programming:

"This will be a great activity. The students need more hands-on activities in science and it is awesome to have this new material provided for us and our students. Thank you!!!"

"Great way to teach these standards. A lot of our material is very old."

"We are so appreciative of the opportunity to provide hands-on learning with the added component of allowing the students to 'meet' the scientists from AMOS. It was a wonderful partnership. I hope the museum plans more like this in the future."

One parent said of our virtual programming, "I just want to thank you for offering these zoom sessions for our kids. These programs are excellent to allow the kids to learn something new as well as see other people. I know that it is definitely hard to allow everyone to be included while still staying on topic, you do an excellent job and we really appreciate it!"

Citations:

www.mckinsey.com/industries/public-and-social-sector/our-insights/covid-19-and-student-learning-in-the-united-states-the-hurt-could-last-a-lifetime

www.bwfund.org/special-reports/stem-education-in-north-carolina/

www.mandlabs.com/current-state-of-stem-education-in-us-what-needs-to-be-done/#:~:text=A%20study%20conducted%20by%20the,keen%20on%20pursuing%20STEM%20careers.

www.aam-us.org/wp-content/uploads/2018/04/American-Alliance-of-Museums-web.pdf
www.nsf.gov/statistics/2018/nsb20181/report/sections/science-and-engineering-labor-force/women-and-minorities-in-the-s-e-workforce
www.informalscience.org/

File Attachment Summary

Applicant File Uploads

- AMOS Recovery-Funds-budget.xlsx

Coronavirus State and Local Fiscal Recovery Funds Proposed Project Budget

Organization Name:	Asheville Museum of Science (AMOS)
Project Name:	AMOS Recovery Plan - Serving our Community with quality STEM Education through the lense of Science Literacy and Recovery
Amount Requested:	

Proposed Project Revenue Funder	Amount	Confirmed or Pending?	Notes
Proposed Buncombe COVID Recovery Funds	\$ 295,000.00	Pending	Request for project
NOAA - NCEI and NC State	\$ 3,000.00	Committed	In Kind SME - Science on a Sphere: 20hrs/ \$75; 1000 mini grant
Buncombe County Health and Human Services	unknown	Committed	In Kind SME - History and Science behind Covid and Vaccines Exhibit Content Support: 20hrs/ (cost pending full design work) Approximate - \$3000
University of North Carolina at Asheville (UNCA)	unknown	Committed	In Kind Sponsorship - Providing SME - Content and Internship Support on Exhibit Design (Cost pending full design work) Approx. \$2000
Ellumanti Technology Exhibit Designer	\$ 4,000.00	Committed	In Kind Sponsorship - Discount on Training and Gifted Content
Mcmillan Pazdan Smith	\$ 2,000.00	Committed	In Kind Sponsorship - Reduction in Cost for final plan development for permitting and light construction purposes
Asheville Museum of Science Captial Donor Funding	\$ 8,000.00	Committed	Donor earmarked funding for capital improvement - exhibit
Adapt Public Relations	\$ 500.00	Committed	In Kind Support - Marketing
Association of Science and Technoogy STEM Annual Training Support	\$ 500.00	Committed	ASTC STEM Training Grant
WNC Community Foundation	\$ 2,000.00	Committed	STEM EcoSystem Education Program (staff time)
List other sources here			
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List other sources here			
List other sources here			
List other sources here			
Total	\$ 315,000.00		

Proposed Project Expenses	Proposed Recovery Funds	Other Funds	Total	Capital or Operating Expense?	Notes
Rent Support	\$ 174,058.00		\$ 174,058.00	Operating	Total Amount of unpaid back rent from April 2020 - May 2021
Exhibit Cost	\$ 63,742.00	\$ 4,000.00	\$ 67,742.00		Geodome, Technology, Exhibit Content, Panel Design, Printing
			\$ -		
Construction Cost to expand exhibit space, relocate shop	\$ 40,200.00	\$ 12,000.00	\$ 52,200.00		Architect (\$4,000), EMP (\$3,000), Permitting (\$1200), Demo/relocation Construction (\$25,000) for construction work, Electrical (\$7,000)
Personnel	10,000	2,000	\$ 12,000.00		Lead educator, Operations Director, Visitor Services Specialist, Part-time educator
Staff travel (mileage)	500		\$ 500.00		Per milage rules
Student travel (off setting expense with covering transportation cost for schools with no funding for transportation)	600		\$ 600.00		Mini grant for schools transportation cost.
	0		\$ -		
STEM Covid Slide Professional Development	400	500	\$ 900.00		STEM Training
Marketing materials	1000	500	\$ 1,500.00		Printing, Logo branding awareness.
STEM Covid Slide Equipment & Supplies	3500	1000	\$ 4,500.00		Rocket launcher, Travel equipment incl. cart, computer transport options, storage bins, lab supplies such as ring stands, goggles, lab coats, hot glue guns, scissors
STEM Covid Slide Consumable prog materials	1000		\$ 1,000.00		3D printing filament, wood and filters for laser cutter, portable planetarium and projector maintenace and repairs, Batteries, iron oxide, neodymium magets, Markers, Paper products, pipe cleaners, glue, starch, vinegar, baking soda, hot glue sticks, popsicle sticks, tape, solder kits

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