XR Sculpture & Booth Experience

June 8, 2026 Submitted by Tracy Evans, President, Exhibitry, Inc.

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XR EXPERIENCE

A visitor raises a handset toward a scale model of a long-lost sailing ship at the bottom of Lake Ontario. Time runs backward and the wreck restores itself in three dimensions. It rises to the surface of virtual water as a sleek schooner under sail in the 1800s. Time shifts forward. We witness her last voyage. We follow the modern-day divers who first reached her, and we reflect on the frigid waters that pulled her under, yet held her intact for over a century.

Narration and perspective shift as visitors move around the model. At the wave of a hand, the physical model transforms into an entirely different vessel, and the sanctuary reveals another chapter of its history. A final call-to-action ties both wrecks to the present-day New York Blue Economy.

The virtual experience is anchored to something visitors can see and touch. The vessel scale model, the centerpiece of the story, rests on an illuminated plinth at ADA-accessible height. Sight-impaired visitors explore the ruined hull and broken masts by touch. An interactive touchscreen station plays the Sanctuary Story and Blue Economy videos, and serves as the silent, subtitled content path for hearing-impaired visitors. For everyone else, ***VR Vue Hybrid Handsets*** bring the wreck fully alive.

XR APPROACH

Our **VR Vue system** creates immersive experiences without a VR headset. We pioneered a unique system combining physical scale models and architectural environments, with a variety of XR viewing devices. We debuted VR Vue at *Exhibitor LIVE,* winning the *Buyers Choice Award* for best new technology. Commercial deployments followed for AT&T, NASA, Northrop Grumman, and others, each refining the system for public-venue audiences.

> "Combining the virtual and the physical is such a smart move and one that increases engagement."
> ~Exhibitor Magazine

BOOTH APPROACH

The installation travels as a complete modular exhibit system, equally at home in a school library, a museum lobby, or a 10x10 or 10x20 conference footprint. A backlit pop-up display wall carries high-resolution sanctuary imagery with integrated LED illumination. Interpretive side panels carry wreck histories and oral histories in easily transportable form. A plinth base conceals the handset storage station, cable management and other booth accessories. Everything packs into rolling transport cases. Setup takes approximately two hours.

ACCESSIBILITY

Exhibitry agrees with MARCO's research finding regarding the challenges of head-mounted VR in public exhibition settings: hygiene, staff burden, onboarding, and accessibility barriers. We developed VR Vue specifically to address these. The *VR Vue Hybrid Handset*, held like binoculars rather than strapped to the head, resolves these issues without sacrificing immersion. The digital content serves visitors of all abilities with no additional staffing or separate stations.

EXPANSION AND DISTRIBUTION

The XR world built for this project is designed as a foundation for future expansion. The first two shipwrecks represent a starting menu: more can be added as new chapters, building a growing catalog of Lake Ontario maritime history without rebuilding the platform. The same architecture extends further to additional Mid-Atlantic sanctuaries and submarine canyons as MARCO and NYSDOS identify future funding opportunities. Beyond the physical installation, the same experience could later reach a global audience as a standalone public app on platforms such as Meta Quest, Apple Vision Pro, and Steam.

PROJECT REQUIREMENTS

Exhibitry's goal is to meet or exceed the requirements for all eight project tasks. The following describes our approach for each.

TASK 1. PROJECT MANAGEMENT

Tracy Evans serves as Principal Producer and project lead, with a designated Project Coordinator running ongoing client communication. Monthly written progress reports and bi-weekly virtual check-ins with MARCO staff match the cadence established in the RFP. Exhibitry maintains a living online production book for the duration of the project: a shared document tracking current status, open decisions, and next steps. It is available for review at any time, without waiting for a scheduled report.

Deliverables include: monthly progress reports, check-in meeting minutes. Exhibitry additionally provides: kickoff meeting summary, baseline schedule, risk register, and a close-out report at project completion.

TASK 2. ASSET REVIEW AND VIABILITY ASSESSMENT

Exhibitry's role in Task 2 is curation in service of the storytelling. We draw on decades of media production experience spanning video restoration, dimensional enhancement, 360-degree video, photogrammetric 3D, and mixed reality. The assessment identifies which assets translate cleanly to the medium, which need remediation, and where the existing collection is strongest. Format recommendations follow naturally: which assets work as 360-degree environments, which become 6DoF interactive elements, which serve as supporting 2D content.

Rudy Valle (Senior Real-time Graphics Technologist) leads technical evaluation. Jesse Garson (Senior Creative Producer) leads creative fit alongside Tracy. Wreck selection is collaborative with MARCO during this task.

Deliverable includes: recommendations on media resources to use, with viability and benefits assessment, and recommended XR format options. Exhibitry additionally provides: asset inventory spreadsheet and clearance log.

TASK 3. MODULAR EXHIBIT DESIGN

The AR Sculpture is designed to deploy across the full range of LONMS venues, from a school library tabletop to a museum lobby or conference footprint, in a form a single staffer can set up unassisted. Three decades of trade show and museum deployment, with exhibits traveling nationally and internationally, inform every component decision, from the concealed storage to the transport case dimensions.

The design is interpretively led rather than technology-led. Accuracy, regional relevance, and suitability for audiences from school-age to adult are built into the brief from the start. Design, procurement, and production are treated as one connected chain: the requirements defined here drive procurement in Task 4 and production specifications in Task 5.

Paul Johnson, President of USM Inc., leads the fabrication design effort from his 40,000-square-foot Houston facility. Federal fabrication for NASA Johnson Space Center, Raytheon, and Naval Air Warfare Center training systems sets the standard of durability and finish quality USM brings to the LONMS installation.

Deliverables: modular exhibit design and procurement memo (as outlined in the RFP), including footprint configurations, technical requirements, materials specifications, and venue deployment matrix.

TASK 4. SUPPLIES PROCUREMENT AND INSTALLATION

The exhibit combines custom-fabricated elements with standard trade show components. Exhibitry fabricates the custom centerpieces: the scaled wreck model, the illuminated plinth, the base unit with integrated storage station, the swivel touchscreen station, and custom rolling transport cases sized and foam-cut for safe travel between venues. Standard backdrop, signage panels, and rigging are sourced from established trade show suppliers, chosen for replaceability if components are damaged in transit.

Each unit is verified against the technical requirements established in Task 3. Exhibitry installs at the MARCO-designated pilot venue and tests against the deployment checklist before sign-off. Subsequent test venues receive the kit with installation guides, video tutorials, and remote support.

Deliverable (as outlined in the RFP): a final report itemizing supply needs and costs, verifying that units meet identified project requirements, and detailing deployment and maintenance procedures.

TASK 5. XR EXPERIENCE PRODUCTION

The XR experience described on Page 1 is built on the same dual-depth content architecture Exhibitry developed for NASA's Gateway VR Experience. The same installation serves a casual visitor taking a short pass through the story and a maritime history enthusiast moving through the full experience.

Production runs as an iterative process with MARCO and project partners. The storyline, the calls-to-action, and the interpretive framing for each wreck are designed collaboratively, with bi-weekly check-ins serving as both project management and creative review.

The production runs as three parallel tracks. The core XR experience is produced for the VR Vue system components. A second track produces the interactive touchscreen experience. The third track produces the video components, including the two storytelling pieces detailed in Task 6. All three tracks share assets, voice, and design language so the exhibit reads as one continuous work across every surface.

Deliverables: production schedule and plan; digital advertisement, promotional clip, and branded micro-video; UI and navigation design; sound design and environmental audio; video footage review and editing; XR experience prototype with optional closed captioning; quality assurance and testing reports; documentation and deployment guide including production notes, media asset metadata, deployment guidance, and setup/operation/maintenance instructions.

TASK 6. STORYTELLING MEDIA

The two videos are developed with NYSDOS and project partners through the same iterative process as Task 5. *Sanctuary Story* features the selected wrecks across two centuries of Lake Ontario maritime heritage, drawing on NOAA 360 footage, recreational diver imagery cleared through MARCO, and oral histories from sanctuary communities. *New York Blue Economy* connects the sanctuary to maritime jobs, port infrastructure, recreational tourism in the surrounding counties, and the freshwater science informing federal and state policy, demonstrating the interconnectedness of healthy coastal systems, working waterfronts, and sustainable economic development. Both videos are approximately two minutes with narration, musical score, sound effects and closed captioning. Deployable versions include exhibit displays, social media cuts, the project landing page, and embedded content within the booth touchscreen.

A public-facing communication piece extends the Blue Economy story for press distribution and social syndication, formatted at length suitable for digital and online platforms.

Deliverables: Sanctuary Story video, Blue Economy Story video, public-facing communication piece. Exhibitry additionally provides: storyboards and scripts for MARCO review, sound design and music package.

TASK 7. INTERNAL TESTING AND REFINEMENT

Testing runs collaboratively with MARCO and project partners across two to three build milestones, from first playable through pre-deployment, combining in-person and remote online sessions. Each session

evaluates usability, navigation, immersion, technical performance, and interpretive clarity across the supported XR formats, and addresses accessibility for visitors with limited mobility and limited prior XR experience. Feedback is incorporated through iterative refinement passes.

Operational testing runs alongside visitor testing. A single LONMS staffer sets up the complete kit from the quick-start guide, with no Exhibitry support, and confirms the sign-off criteria before pilot deployment.

Deliverables (as outlined in the RFP): testing plan with objectives, criteria, methods, and metrics; structured feedback summaries identifying strengths, issues, and areas for refinement; implementation of refinements; final testing report.

TASK 8. INSTALLATION STRATEGY AND ONE-YEAR SERVICE

A distribution plan accompanies the kit: documented installation procedures, platform compatibility specifications, and access methods. The pilot venue receives on-site Exhibitry installation, staff training, and post-deployment validation. Subsequent venues receive the kit with installation guides, video tutorials, and remote support for first-time setup. Hardware and software compatibility is verified against each venue's approved configuration before deployment.

The one-year service and support framework is presented as a distinct line item, per RFP FAQ guidance. It provides technical assistance, remote and on-site as needed, prioritized by severity with urgent install-down issues addressed first; software updates and bug fixes; minor content updates as required by the State or NOAA; and replacement guidance with vendor support for hardware issues.

Deliverables (as outlined in the RFP): installation instructions, user access guides, FAQs, troubleshooting materials, quick-start instructions, one-year service and support framework (distinct line item), and final report covering deployment outcomes, challenges, lessons learned, and recommendations for scaling.

PROJECT SCHEDULE

The project runs from contract execution through final delivery on December 31, 2026.

Period	Key Activities	Tasks
June 2026	Contract execution; kickoff meeting; baseline schedule and risk register; asset access established with MARCO and NOAA	T1,T2
July to August	Asset viability memo complete; modular design memo and venue requirements complete; XR pre-production (script, storyboard, audio plan); hardware procurement initiated	T2,T3,T5,T6
August to September	Hardware procurement complete; booth envelope, signage, and scaled model fabrication underway at USM; XR production active; first playable build	T3,T4,T5,T6,T7
September to October	First testing session and refinement pass; second playable build; storytelling videos in post-production; tablet integration and custom handset audio build complete	T5,T6,T7
October to November	Content-complete XR build; second testing session; videos delivered for MARCO review; pilot venue installation	T5,T6,T7,T8
November to December	Final testing session; pre-deployment build; subsequent venue deployments; service framework activated; close-out report	T7,T8
December 31, 2026	All Task 1 through Task 8 deliverables submitted to MARCO	All

The schedule front-loads asset review and design so production decisions are made against confirmed source material.

RISK APPROACH

Asset availability and clearance. NOAA's 360 video and 3D model library is documented and available. Recreational diver footage and oral histories require clearance through MARCO. Mitigation: Task 2 establishes clearance status before Task 5 production begins; alternative source material is identified during asset viability if needed.

Hardware lead time. Meta Quest 3 supply has been stable. Mitigation: hardware orders placed at end of Task 3 design completion; backup vendor identified.

Fabrication schedule. USM operates a 40,000-square-foot Houston facility with federal-fabrication track record. Mitigation: design freeze at end of Task 3 with five-week production window built in, consistent with prior NASA and Naval Aviation Museum deliveries.

BUDGET SUMMARY

The total fixed fee is $300,000, structured by task. All rates are fully loaded (no separate indirect or fringe markup). Hardware, fabrication, signage, shipping, and travel are included within task allocations. Per RFP FAQ guidance, the one-year service and support framework is presented as a distinct line item.

T1. Project Management (7 months): $18,000. T2. Asset Review and Viability Assessment: $22,000. T3. Modular Exhibit Design: $15,000. T4. Supplies Procurement and Installation: $95,000. T5. XR Experience Production: $65,000. T6. Storytelling Media: $28,000. T7. Internal Testing and Refinement: $12,000. T8a. Installation Strategy and Deployment: $10,000. T8b. One-Year Service and Support Framework: $15,000. Contingency (7%): $20,000. TOTAL: $300,000

A detailed budget worksheet (Appendix A) itemizes labor and hardware, travel, fabrication, signage, and shipping allocations by task. Exhibitry prices and delivers on a fixed-fee, deliverable-based model rather than hourly billing, so task allocations reflect total committed value per deliverable. Fully loaded rates are available for change-order reference.

QUALIFICATIONS

Exhibitry has produced public-audience XR exhibits for federal, commercial, and cultural-institution clients for nearly three decades. Recent and relevant work includes NASA Johnson Space Center, Kennedy Space Center, the National Naval Aviation Museum, the SFPUC Alameda Creek Watershed Center, and Northrop Grumman. The project team brings more than seventy years of combined experience in immersive exhibit production.

Tracy Evans. Principal Producer / Creative Director. 30 years. Rudy Valle. Senior Real-time Graphics Technologist. 12 years. Jesse Garson. Senior Creative Producer / Audio Lead. 12 years. Darren Emanuel. XR Technologist. 9 years. Paul Johnson. President, USM Inc. 32 years.

Detailed capability statements appear in Appendix G (maximum two pages each per RFP specification). Additional case studies and downloadable resources are available at exhibitry.com/lonms.

SUBMISSION AND CONTACT

Detailed methodology, concept video, full case studies, and downloadable resources at exhibitry.com/lonms. Tracy Evans, President. Exhibitry, Inc. tracy@exhibitry.com. w. 281-240-2212 / m. 281-827-5111

Appendices

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Appendix A - Budget Breakdown

Exhibitry has deliberately weighted this budget toward experience over infrastructure. The physical installation is lean by design: the minimum footprint that presents professionally in any venue, freeing more than half the program fee for the XR experience, the storytelling videos, and the content production that actually moves visitors. *That ratio is not fixed. A streamlined physical footprint frees additional content budget.* A more elaborate build, larger display wall, premium fabrication, or additional interpretive panels shifts it the other way. Exhibitry will make either case clearly at Task 1 kickoff.

Task	Description	Labor	Hardware / Travel	Total
T1	Project Management (7 months)	$18,000	-	$18,000
T2	Asset Review and Viability Assessment	$22,000	-	$22,000
T3	Modular Exhibit Design	$15,000	-	$15,000
T4	Supplies, Procurement, and Installation	$29,000	$66,000	$95,000
T5	XR Experience Production	$65,000	-	$65,000
T6	Storytelling Media	$28,000	-	$28,000
T7	Internal Testing and Refinement	$12,000	-	$12,000
T8a	Installation Strategy and Deployment	$10,000	-	$10,000
T8b	One-Year Service and Support (distinct line item)	$15,000	-	$15,000
	Program Fee Subtotal	$214,000	$66,000	$280,000
	Contingency (7%)			$20,000
	TOTAL			**$300,000**

Appendix B - Booth Components

THE MODULAR SYSTEM

The AR Sculpture experience travels as a complete, self-contained exhibit system that adapts to venues of any size, from a 10x20 conference footprint to a school library tabletop. The same components serve every configuration. What changes is which components travel to a given venue and how they are arranged. Setup by a single LONMS staffer from a quick-start guide takes one to two hours.

COMPONENTS

Backlit display wall. A wide, illuminated landscape-format graphic panel carrying high-resolution sanctuary imagery and project identity. The primary visual anchor of the installation in larger configurations.

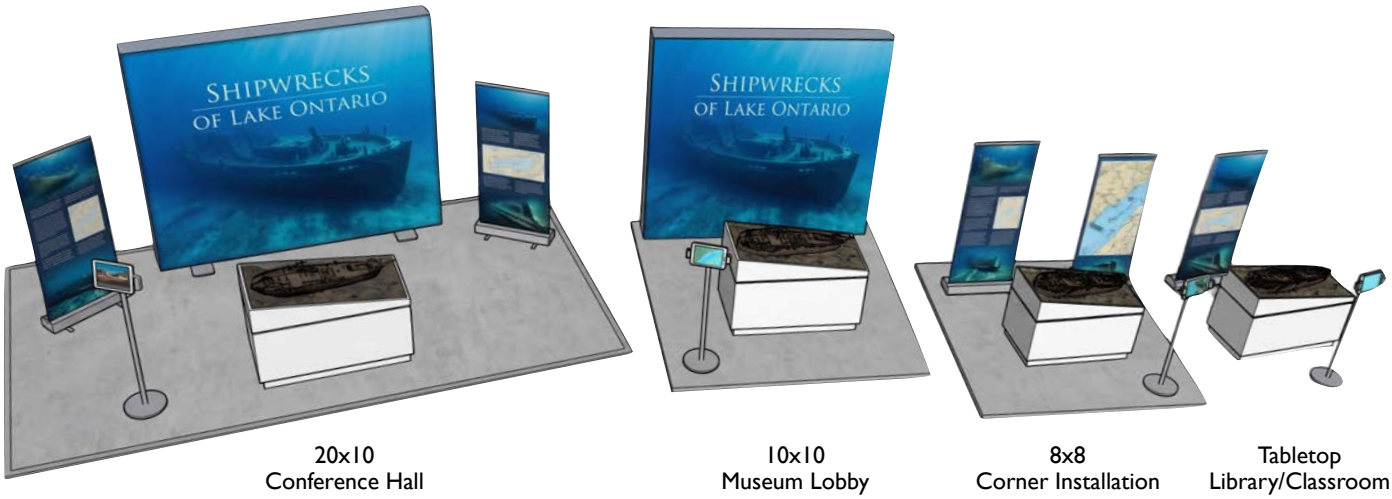
Interpretive banner stands. Narrow, tall, portrait-format retractable panels on weighted floor bases. Each stand carries wreck histories, oral history content, or contextual sanctuary information. Lightweight, self-standing, and easy to reposition.

VR Vue Sculpture plinth. A custom-fabricated white base unit at ADA-accessible height. The scaled wreck model sits on top. The plinth conceals the handset storage station and cable management below the surface.

VR Vue Hybrid Handsets. Four tethered stereoscopic viewers housed in custom enclosures. Held like binoculars. Stored and charged inside the plinth base between visitors.

Swivel touchscreen station. A floor-mounted iPad Pro 13-inch on an articulating arm or pole stand. Plays the Sanctuary Story and Blue Economy videos and displays the same XR content with closed captions for hearing-impaired visitors.

Rolling transport cases. Custom-fabricated cases sized and foam-cut for every component. Labeled for non-technical operators. The full system ships in cases that fit through a standard doorway.



FLEXIBLE CONFIGURATION

The AR Sculpture system adapts to any venue without modification to the core XR experience. The diagram shows four standard configurations, from a full 10x20 conference footprint to a single tabletop for a school library or small visitor center. All four configurations use the same content, the same VR Vue Hybrid Handsets, and the same wreck model. What changes is which components travel to a given venue and how they are arranged on site.

The LONMS installation guide, delivered at project completion, includes specific configuration recommendations for each participating venue based on its footprint, layout, and primary audience. Each recommendation covers component selection, floor plan, setup sequence, and estimated setup time for a single LONMS staffer working from the quick-start guide.

Appendix C - The Sculpture

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The VR Vue Sculpture

The model is where the story begins.

Before a visitor raises the handset, before the hologram appears, there is a physical wreck sitting on the plinth. Sight-impaired visitors run their hands along the broken hull. Children lean in to look. The model earns its place in the exhibit before any technology enters the picture.

The model shows the wreck as it is today. As the cold fresh water of Lake Ontario has kept her, intact but collapsed, preserved against decay for over a century. What the photogrammetric scan captured 117 feet below the surface, the sculpture delivers into visitors' hands. When a visitor raises the handset and the schooner restores itself, the physical model beneath it is doing its own interpretive work. The contrast is the story: here is what she became, and here is what she was. The two are inseparable.

Appendix D - VR Vue Handset

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VR Vue Handset

Pick up a VR Vue Hybrid Handset and the wreck comes alive.

We designed the VR Vue system so visitors walk straight into the experience without thinking about the device. It's held by a short ergonomic handle below the optics, the natural gesture of someone raising opera glasses. The stereoscopic effect is immediate, and the built-in spatial audio fills out the story around it. Visitors choose their own level of immersion simply by how they hold it and how long they stay. And they can step out of the experience as quickly as they stepped in. No unstrapping, no discomfort, no disorientation.

The handsets are tethered to the plinth, the tether supplying power so they are always charged and always ready. The form factor accommodates glasses, hearing aids, and visitors of every age without adjustment. One LONMS staffer can easily run the full installation with minimal intervention.

Appendix E - VR Vue Viewer

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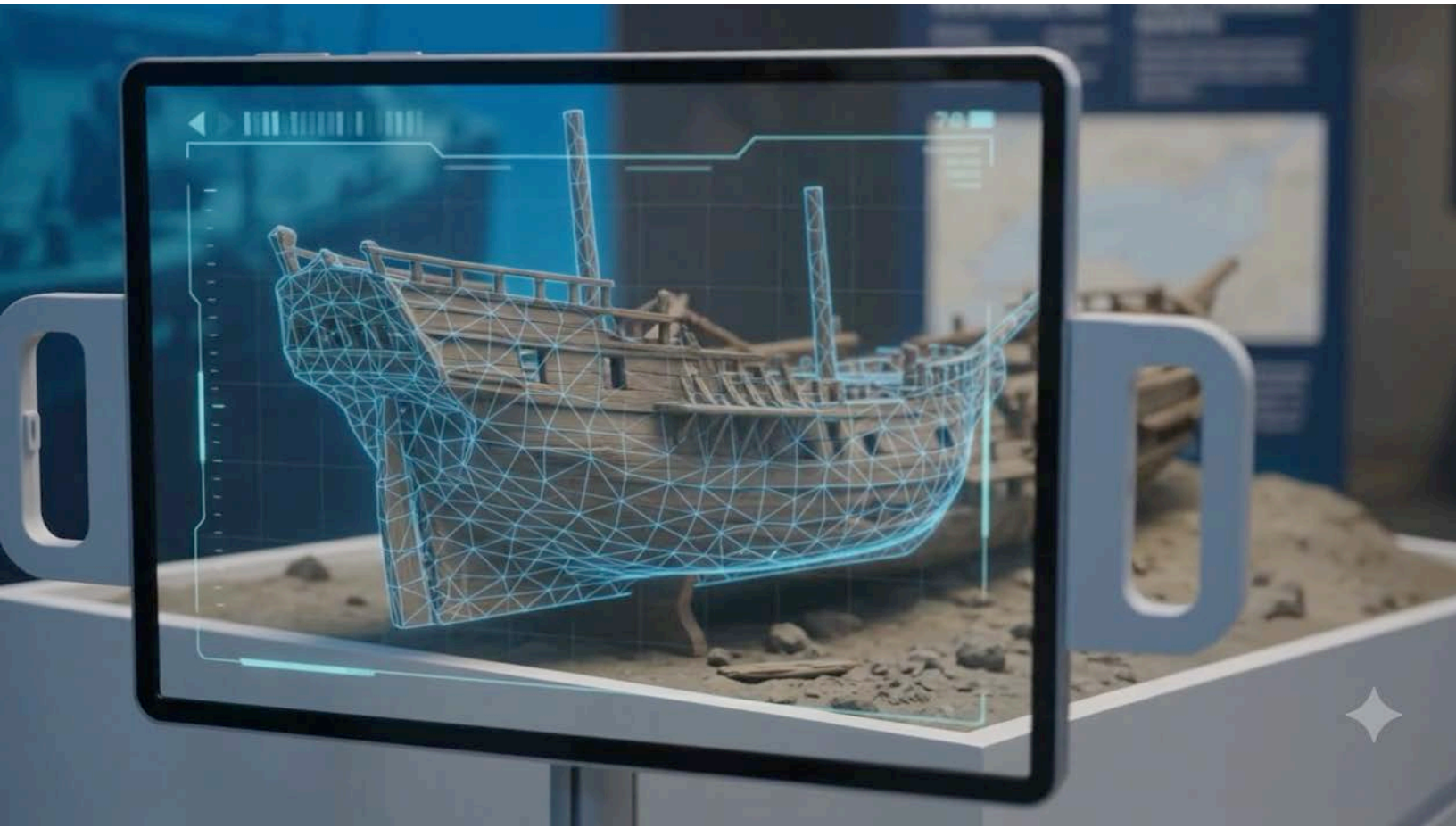
VR Vue Viewer

The VR Vue Viewer brings the Sanctuary Story and the Blue Economy narrative to the booth through an intuitive touch interface. The menu is built as a platform for future expansion, using the same architecture that allows the XR experience to grow its catalog of wrecks over time.

The touchscreen also presents the full AR experience that plays on the handsets, navigable entirely by touch. Subtitles run throughout for hearing-impaired visitors. No audio required.

The Viewer swivels on its stand to point in any direction, allowing visitors to look across and into the model to see the AR experience from any angle. For a full walk-around experience, it detaches from the stand entirely. Carry it around the model and the content responds as you move, the same story, held differently. Dock it back and it recharges for the next visitor.

When no one is actively using it, the videos keep playing and the booth stays alive.



Appendix F - Virtual Storytelling

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Virtual Storytelling

The physical model is the anchor. The story begins the moment a visitor raises the viewer.

Time runs backward. The broken hull draws itself together. Masts rise from nothing. Sails catch a wind that hasn't blown for over a century. What rested in the sediment of Lake Ontario a moment ago is suddenly a three-masted schooner under full sail in 1873, alive and heading out to sea.

That transformation is where the storytelling lives. Not in a panel on a wall, not in a video playing on a loop, but in a moment a visitor causes to happen. They hold the viewer. They move around the model. The narration shifts with them, revealing a different layer of the story from every angle. The storm that took her. The cold fresh water that held her intact. The divers who found her decades later, astonished at what they discovered.

At the wave of a hand, the wreck transforms into a different vessel entirely and the lake reveals another chapter of its history.

The experience is not a simulation. It is a point of view: what it felt like to sail her, to lose her, and to find her again. That is the story we tell.

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Appendix G - Team Biographies

TRACY EVANS

President / Principal Producer / Creative Director

Years of relevant experience: 30 years founding and leading Exhibitry; preceded by seven years as Multimedia Producer and Animator at Pennebaker Design/LMC Inc., three years at Herring Design, and approximately 10 years as a theatrical producer and professional stage magician.

Role on LONMS: Principal Producer and Creative Director. Senior creative and technical lead across all phases: concept development, stakeholder discovery, modular design framework, XR experience direction, deployment, and one-year service framework. Primary point of contact with MARCO, NYSDOS, OCWG, and the LONMS Sanctuary Advisory Committee.

Education: Bachelor of Arts, Visual Communications, Art Institute of Houston, 1991.

Summary

Tracy Evans is the founder and President of Exhibitry, where for thirty years he has led the design and production of immersive XR, holographic, and interactive exhibits for clients including NASA, Boeing, Northrop Grumman, Lockheed Martin, Merck, the United States Navy, the National Naval Aviation Museum, the San Francisco Public Utilities Commission, ChampionX, SLB, and major museums and educational institutions across the United States. Before founding Exhibitry, Evans created multimedia labs and production departments for Pennebaker Design/LMC (7-years), Herring Design (3 years) and built a decade-long career as a professional stage magician, and credits that background with shaping the company's defining principle: that the most effective exhibit technology is the technology that disappears in service of story.

Relevant project experience (selected)

- Apollo Astronaut Holograms, NASA Kennedy Space Center Visitor Complex (2021). Principal Producer and Creative Director. Life-size holographic displays of Apollo astronauts including Charlie Duke and Jim Lovell, deployed at KSC Apollo/Saturn V Center. Featured in Houston Chronicle, March 2021.
- HoloMap, KSC Gateway Facility. Principal Producer. Multi-era environmental storytelling installation; 11 interactive exhibits.
- Webb Space Telescope HoloTube, KSC. Principal Producer. Holographic storytelling at scale.
- Alameda Creek Watershed Center, SFPUC (2022 to 2026). Principal Producer and Creative Director. Twelve-experience interactive program including Sunol HoloTube, Calaveras Dam Today, multitouch tables with mini-games, Perspectives on the Watershed (360-degree integration), Virtual Artifact Labels, Day in the Life. Currently in Phase 2 (fabrication) under SFPUC contract via S.J. Amoroso Construction.
- Anaheim Education Center. Principal Producer and Creative Director. Sliding x-ray exhibit, 5-participant EV racing game, 5 interactive wall screens. ADA-compliant and bilingual throughout.

- Built on Water, Ontario Museum of Art. Principal Producer. Water-themed gamification for museum public audiences.
- Go Fish Education Center. Principal Producer. Three experiences including 12-foot HoloTube installation explaining the water cycle.
- National Naval Aviation Museum, Pensacola. Principal Producer. Six life-size deck crew holograms; subsequent Apollo astronaut HoloTube conversion for the Navy.
- Merck HoloTube Experiences (2025). Principal Producer. Custom HoloTube HalfPipe with AI-driven avatars deployed at pharmaceutical congresses in Madrid, Chicago, and Berlin.
- SLB Project Neo / Xray Vue. Principal Producer. Custom cylindrical Xray Vue Video Window for SLB oilfield tools; modular, scalable platform for trade shows and customer centers.
- ChampionX PCT Display Kiosk. Principal Producer. Production chemistry visualization kiosk with cutaway model and embedded digital content.
- Oxy / Occidental, The Ion Center, Houston. Principal Producer. Carbon management interactive exhibit.
- Proprietary platforms developed under Evans's direction
- HoloTube. Life-size holographic display platform (multiple form factors: HalfPipe, Forge, Mini).
- VR Vue. Immersive virtual reality system, delivered through the proprietary VR Vue Hybrid Handset, without head-mounted displays.
- TouchFree 3D. Screen-free gesture-based interaction system.
- AI avatar integration framework. Secure conversational AI for public-audience deployment.
- Specialized skills
- Creative direction, concept development, holographic display engineering, XR experience design, public-audience exhibit design, accessibility-first design, federal/state proposal authorship, client relationship management for federally-funded projects, AI avatar deployment, modular exhibit framework design.

Speaking and publications

- "Harnessing Hologram Technologies for Museums: Practical Insights for 2025." American Alliance of Museums Annual Meeting and MuseumExpo, Los Angeles, 2025.
- Featured in Houston Chronicle, "Former magician brings holograms, virtual reality to NASA" (March 2021).

Patents

Mass-participation Movie. US Patent Application 20110194839, issued August 11, 2011.

RUDY VALLE

Senior Real-time Graphics and VFX Technologist

Years of relevant experience: 12 years at Exhibitry.

Role on LONMS: Senior technical lead for XR experience production. Real-time graphics development, software architecture, AI avatar integration, and overall technical execution of the XR deliverable.

Education: Bachelor of Arts, 3D Modeling and Animation, University of Advancing Technology (2007 to 2011).

Summary

Twelve years at Exhibitry as senior real-time graphics and VFX technologist, leading software development across more than thirty-five custom applications on iOS, Android, PC, and Mac platforms. Specializes in real-time graphics programming, game-engine development, VFX pipeline work, and visual design for holographic and interactive exhibits. Cross-disciplinary expertise spanning museum installations, aerospace, and energy-sector immersive projects. Senior technical lead on Exhibitry's HoloTube platform and AI avatar integration work.

Relevant project experience

- Apollo Astronaut Holograms, NASA Kennedy Space Center. Lead software developer.
- Alameda Creek Watershed Center, SFPUC. Lead programmer across the 12-experience interactive program.
- Anaheim Education Center.
- Merck HoloTube Experiences (2025). Programmer and AI integration lead. AI-driven avatar deployment at Madrid, Chicago, Berlin.
- TCS Chennai Experience Center HoloTube AI Avatar.
- AI Digital Media Experience Center, Stage 2 proposal.
- SEC Riyadh / SMS, Digital Transformation Command Center proposal (active). Technical lead on AI avatar architecture, on-prem vs. cloud architecture analysis.
- Halliburton Tablet Experience.
- Specialized skills
- Real-time graphics programming
- iOS and Android application development
- Cross-platform deployment (PC, Mac, mobile)
- VFX pipeline integration
- AI avatar integration (HeyGen, NVIDIA ACE/Tokkio architecture)
- Battletech Universe (Dark Art Images). Lead game developer on a top-down shooter built in Unity 3D, sanctioned by IGP, current intellectual property licensee for Battletech and MechWarrior on PC and Xbox.
- Dark Art Images, Freelance 3D Artist (2011 to 2014). Unity 3D asset production, commercial and TV spots, video promos, 2D fantasy and sci-fi illustrations.

JESSE GARSON

Senior Creative Producer

Years of relevant experience: 12 years at Exhibitry. Prior career includes animation and interactive content production for Disney/Fox, Dreamworks, Paramount, Warner Bros. Co-developer of multiple iOS and Android titles.

Role on LONMS: Senior creative producer. Hands-on across editorial, graphics, motion design, video production, and creative direction. Leads the Sanctuary Story and Blue Economy storytelling videos; supports XR experience UI and visual design; coordinates with animators, videographers, and interactive developers across all 8 RFP tasks.

Education: BA, Hampshire College (Digital Communication and Media, Multimedia, Communications, and Cognitive Science), 1996. Self-defined major in "Computers and Video as Storytelling Media" through the Lemelson Program for Innovation and Invention.

Summary

Twelve years at Exhibitry as senior creative producer, hands-on across editorial, graphics, motion, video production, and creative direction. Career spans animation and interactive content production for Disney/Fox, Dreamworks, Paramount, and Warner Bros. Leads prototyping, design, and storyboarding at Exhibitry, directing teams of animators, videographers, and interactive developers on projects integrating multiple video screens, holograms, touchscreens, body tracking systems, dynamic lighting, and environmental sound.

Relevant project experience

- Gateway, Deep Space Launch Complex, Kennedy Space Center Visitor Complex. Creative lead and content developer for the History of KSC HoloTube Kiosk, James Webb Space Telescope HoloTube, and interactive screens surrounding the Artemis and Dragon space capsules.
- The Anaheim Sustainability Education Center. Creative lead for multiple visitor experiences including the EV Race interactive game, Water Treatment 3D diorama, and Energy Sources kiosks.
- Alameda Creek Watershed Center, SFPUC. Creative lead. Spearheaded development on immersive environmental audio for alcoves, designed and animated content for the Calaveras Dam Today and Day in the Life kiosks, and served as design lead for the 3D topographical map, ADA artifact labels, and interactive touchscreen tables.
- Oxy / Occidental, The Ion Center, Houston. Creative lead and lead animator for large-scale video wall and interactive HoloTube displays; provided expert consultation on DMX lighting and surround audio integration.
- SLB Project Neo / Xray Vue. Video producer and hardware integration consultant.
- AI Digital Media Experience Center. Creative concept development across multiple interactive experiences.
- Water Keepers educational game. Creative lead and animator for this interactive title launched on iOS and Android platforms.
- Disney: Phineas and Ferb Home Media. Creative lead for bonus content and educational game features on The Fast and the Phineas and The Daze of Summer DVD home video releases.
- Hot Shot Business, Disney Online / Kauffman Foundation. Creative lead, animator, and producer for this award-winning online educational business simulation.

- BluRay and DVD bonus features for Warner Bros., Dreamworks, Disney. Creative lead and senior animator for interactive bonus features on Harry Potter, Shrek, Kung Fu Panda, Puss in Boots, and numerous other titles.
- PCFriendly DVD-ROM Content. Senior developer for Windows-based interactive bonus content featured on Ice Age, X-Files (Seasons 3 to 9), Terminator 2, Men in Black, and other titles.
- Holocaust Museum Houston, The Butterfly Project. Consultant and content developer for this community-focused arts education initiative.
- Beckinfield Web Series. Art director, front-end developer, content producer, and managing editor for weekly streaming series and community website.
- National Treasure 2, Disney. Creative lead and lead developer for a series of promotional online video games for the World's Biggest Treasure Hunt.
- Specialized skills
- 2D and 3D animation, motion graphics, animation director and producer (ToonBoom, Adobe Animate, After Effects, DaVinci Resolve, Maya, Cinema4D)
- Director, editor, producer for live event video feeds, short films, social media, and disc special features (Premiere, Final Cut Pro, QLab, Resolume)
- Front-end web development (HTML, CSS, JavaScript), UI and UX development, graphic design, visual identity development
- Interactive game development (Unity3D, Adobe Animate, Java, iOS, Android)
- Storyboarding and prototyping interactive media (web, mobile, Unity3D, Unreal, Java)
- Voice-over performer, director, audio engineer

DARREN EMANUEL

XR Technologist / Real-time 3D and VFX Engineer

Years of relevant experience: 9 years at Exhibitry. Prior experience at the Houston Museum of Natural Science (2012 to 2014, Exhibits Department).

Role on LONMS: XR technologist supporting Rudy Valle's technical lead. Real-time 3D production, VFX, exhibit technical integration. Hardware-software integration for handheld XR units, kiosk programming, asset preparation from NOAA-provided footage and 3D shipwreck models.

Education: Brazosport College, University of Houston.

Summary

Nine years as a cross-disciplinary engineer at the intersection of visual media and technology, combining 3D production, real-time graphics programming, and exhibit technical integration. Background in art, music, and photography expanded into 3D modeling, animation, and interactive media during his tenure at the Houston Museum of Natural Science, where he developed digital and experiential projects. At Exhibitry, develops interactive exhibits that merge visual storytelling with real-time systems and user engagement. Extensive experience designing and building custom embedded electronics and microcontroller-based systems for interactive and experiential applications.

Relevant project experience

- Oxy / Occidental, The Ion Center, Houston. Pre-install lead, hardware staging, technical integration. Hardware integration, R&D, hardware system design.
- SLB Project Neo / Xray Vue. Technical integration lead. Circuit board mounting, screen integration, fabrication coordination.
- Alameda Creek Watershed Center, SFPUC. Software development, hardware integration and R&D across Tables exhibit, Artifact Holotube, Audio Spotlight, Calaveras Dam, Changes to the Valley.
- USAF Academy AI Receptionist proposal. AI security architecture documentation lead. Drafted Section 3 Prompt Injection guidance and overall security framework documentation.
- SEC Riyadh, NVIDIA ACE / Tokkio on-prem AI avatar evaluation (active). Lead technical evaluator for NVIDIA on-prem stack including ACE microservices, Audio2Face-3D, Riva ASR/TTS, hardware specification, NPN partner identification.
- SpinDisplay / GIWOX fan protocol reverse engineering (LumenAir product line). Lead technical investigation of TCP control protocol for 3D fan displays. Lead software development.
- Houston Museum of Natural Science. Experiential exhibits including Welch Chemistry Hall interactives; Game of Life (lead software development, hardware integration); Interactive Periodic Table (lead software development, hardware integration); Powers of Ten Exhibit (animation, compositing, software development); Hall of Paleontology (hardware build and deployment).
- National Naval Aviation Museum. Lead HoloTube development.
- Kennedy Visitors Center, Cape Canaveral Launch Complex Interactive.
- Purdue University Anamorphic Video Wall. 3D modeling, animation, and render.
- Aramco HoloTube. 3D modeling, software development.
- Merck HoloTube. R&D, 3D modeling.

- Anaheim Public Utility Exhibits, Energy Sources exhibits. Lead software development, hardware interface integration. Water Treatment: sliding rail hardware design and integration, lead software development.

Specialized skills

- 3D modeling and animation (Cinema 4D, ZBrush, Blender, Maya)
- Real-time graphics integration
- Hardware and software systems integration
- Interactive media development
- Hardware troubleshooting and field engineering
- AI avatar architecture (NVIDIA ACE, HeyGen, Audio2Face-2D/3D, backend)
- Network protocol analysis and reverse engineering
- Unity3D, Unreal Engine, Adobe Creative Suite, Arduino/ESP32, PC/Mac/Android/Brightsign hardware platforms

PAUL JOHNSON

President, USM Inc.

Years of relevant experience: 32+ years in specialty fabrication, hardware integration, and systems engineering for aerospace, defense, and exhibit applications.

Role on LONMS: President of USM Inc., leading the engineering and fabrication effort on the LONMS modular exhibit. USM is Exhibitry's strategic fabrication partner across federal, museum, and commercial deployments. For LONMS specifically, USM fabricates the custom centerpieces: the scaled wreck model, the illuminated plinth, the countertop base unit with integrated storage station, and the custom rolling transport cases, delivered as fixed-fee unit deliverables.

Education: Bachelor of Arts, Economics, University of Houston, 1989 to 1992.

Company affiliation: USM Inc. (usminc.com), Houston, TX. USM has been in operation 60+ years as a custom fabricator for government, military, NASA, and industrial clients. USM partners with Exhibitry as a strategic fabrication resource across selected engagements.

Summary

Paul Johnson is President of USM Inc., a 60-year-old Houston-based specialty fabricator serving NASA, the U.S. Naval Air Warfare Center, Raytheon, and a wide range of government, defense, and aerospace clients. USM operates a 40,000-square-foot Houston facility with full machining, fabrication, and assembly capabilities, including 8,000 square feet of CNC machine shop, 8,000 square feet of model shop with CO2 laser cutting, and high-bay fabrication space supported by a 7.5-ton overhead crane and a 30-foot-tall paint booth. Paul leads the engineering, fabrication, and integration of custom hardware including full-scale aerospace mockups, training devices, simulators, scale models, and interactive exhibits.

USM partners with Exhibitry as a strategic fabrication resource for HoloTube units, modular exhibit hardware, and custom enclosure engineering across federal, museum, and commercial deployments.

USM Inc. selected projects

- NASA Johnson Space Center. Space flight hardware fabrication; multiple full-scale Space Station Modules for Neutral Buoyancy Laboratory training; SPDM NBL Training Mockup. Long-running NASA relationship.
- U.S. Pavilion at EXPO. Twelve large-scale models and mockups of U.S. Space Hardware.
- Raytheon Technical Services Company (Houston operations). Ongoing Task Order contract for fabrication of training hardware and electrical panels and components for the space station program.
- Naval Air Warfare Center TSD. F-22 ejection seat mockups; F-18 full-scale cockpit, ejection seat, and canopy maintenance trainer; F-14 full-scale cockpit, ejection seat, and canopy maintenance trainers; SJU5 and SJU6 high-fidelity ejection seat mockups.
- Exhibitry partnership (decade-plus, strategic fabrication)
- SLB Project Neo / Manara Xray Vue (2026). Fabrication lead on curved-screen cylindrical display enclosure. Received SolidWorks files, led production book, and delivered the enclosure as a fixed-fee unit deliverable.
- HoloTube fabrication across multiple Exhibitry deployments.

Specialized skills and capabilities

- Custom mechanical and structural engineering for exhibit and aerospace applications

- Full-scale mockup fabrication (including aerospace cockpit and ejection seat trainers)
- CNC machining and CO2 laser cutting
- Hardware sourcing and procurement
- AV systems integration
- Electronics integration and wire harness fabrication
- Onsite installation supervision (federal facility, museum, and commercial environments)
- SolidWorks design fabrication workflow

USM Inc. facility and capabilities

- **Facility:** 40,000 sq ft, including 8,000 sq ft CNC machine shop, 8,000 sq ft model shop, high-bay fabrication area
- **Equipment:** 7.5-ton overhead crane; CO2 laser cutting; CNC machining; 448 sq ft by 16 ft side downdraft paint booth; 30 ft full-size mockup capability
- **Industry classifications:** Defense and Space Manufacturing
- **Workforce:** 11 to 50 employees with capability to scale via qualified contract labor
- **Materials specialization:** ferrous and non-ferrous metals, plastics, wood
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SANDRA ROSENBAUM

Office Manager / Project Administrator

Years of relevant experience: 30+ years across retail sales, commercial sales, and commercial construction management.

Role on LONMS: Project administration. Monthly invoicing, hours reporting against fixed-fee deliverables, contract administration, billing and licensing coordination, and required progress documentation in coordination with MARCO's Science Program Manager. Primary administrative point of contact for billing.

Education: Associates Degree, Fashion Merchandising and Marketing, Art Institute of Houston, 1988 to 1990.

Summary

Sandra Rosenbaum serves as Office Manager at Exhibitry, overseeing billing, licensing, contract administration, project reporting, and operations. Drawing on more than three decades of management experience spanning retail sales, commercial sales, and commercial construction, she combines business insight with practical leadership to keep projects and personnel aligned. Known for a professional yet personable approach, she believes that strong relationships and clear processes are the foundation of exceptional results in fast-paced creative and technical environments.

Relevant experience

- Exhibitry, Office Manager (2010 to Present). Billing, licensing, contract administration, monthly invoicing, project reporting across all federal/state and commercial engagements.
- Commercial Construction Management. Outside Operations Manager, Reeder Flooring (2004 to 2008); Project Coordinator, Floors, Inc. (2000 to 2004).
- Commercial Sales. Interface, Inc., Showroom Manager (2008 to 2010).
- Retail Sales. The Limited Corporation, Store Manager (1998 to 2000); Clothestime, Co-Manager (1995 to 1998).

Specialized skills

- Federal and state contract billing and reporting (SFPUC at ACWC, Kennedy Space Center)
- Project administration and documentation
- Vendor management
- Software licensing administration
- Quickbooks