# Society for Industrial Archeology - Industrial Heritage Preservation Grant
## Grant Application Cover Sheet

| | | | |
|---|---|---|---|
| Date of application: | 1. 02/24/2012 | Title of Grant: | 2. Advancing the Study of Submerged Industrial Sites |

| | | |
|---|---|---|
| 3. Adam I. Kane | 4. (802) 475-2022 | 5. adamk@lcmm.org |
| *Name of Principal Researcher (Send PDF of CV with this application)* | *Phone* | *E-mail* |

| | |
|---|---|
| 6. 16 Scovel Lane | 7. Vergennes, VT 05491 |
| *Address* | *City, State, Zip* |

| | | |
|---|---|---|
| 8. Lake Champlain Maritime Museum | 9. (802) 475-2022 | 10. adamk@lcmm.org |
| *Name of Project Sponsor (Organization and contact name) (Send PDF of letters of sponsorship or collaboration)* | *Phone* | *E-mail* |

| | | | |
|---|---|---|---|
| 11. 4472 Basin Harbor Road | 12. Vergennes, VT 05491 | 13. 222570380 | 14. 501(c)3 |
| *Address* | *City, State, Zip* | *Tax ID* | *Type of Tax Status* |

| | | |
|---|---|---|
| 15. NPS, National Center for Preservation Technology | 16. (318) 356-7444 | 17. ncppt@nps.gov |
| *Name of Project Co-Sponsor (s) (Send PDF of letters of sponsorship or collaboration)* | *Phone* | *E-mail* |

| | | | |
|---|---|---|---|
| 18. 645 University Parkway | 19. Natchitoches, LA 71457 | 20. N/A | 21. Federal Agency |
| *Address* | *City, State, Zip* | *Tax ID* | *Type of Tax Status* |

| | | |
|---|---|---|
| 22. Lake Champlain Maritime Museum | 23. (802) 475-2022 | 24. adamk@lcmm.org |
| *Name of person or organization receiving the check* | *Phone* | *E-mail* |

| | |
|---|---|
| 25. 4472 Basin Harbor Road | 26. Vergennes, VT 05491 |
| *Address* | *City, State, Zip* |

27. Brief Description of Project (Send full project summary & application narrative in PDF)

The Lake Champlain Maritime Museum seeks funding for innovative research in the non-invasive documentation of an early twentieth century canal boat sunk in Lake Champlain. Scanning sonar units are now capable of capturing three-dimensional scans of complex underwater objects. Scanning sonars will potentially have extraordinary utility in the study of submerged industrial archaeological sites located in turbid waters where detailed archaeological documentation is impractical. Specifically, LCMM will use a Blueview BV5000 Mechanical Scanning Sonar to map a previously documented canal boat wreck in Lake Champlain. The existing drawings and measurements will provide a critical baseline for assessing the effectiveness of the scanning sonar data, and its applicability to other underwater archaeological sites. The proposed study is particularly relevant to submerged nineteenth-century industrial archaeological sites, which tend to have significant intact and exposed structural components.

| | | | |
|---|---|---|---|
| 28. Project start date: | 08/06/2012 | 29. Project end date: | 08/17/2012 |

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|---|---|---|---|---|
| 30. Is this a new proposal ? | ✓ | Yes | | No |
| 31. Is this a resubmitted proposal ? | | Yes | ✓ | No |
| 32. Are you a previous SIA Grant Awardee ? | ✓ | Yes | | No |
| 33. Is this grant your only funding source ? | | Yes | ✓ | No |

| | |
|---|---|
| 34. Total dollar amount requested: *(send PDF of full budget)* | $2,600.00 |
| 35. Total matching funds: | $47,133.75 |
| 36. Total project budget: | $49,733.75 |

| | |
|---|---|
| 37. Print Name of Principal Researcher: | Adam I. Kane |
| **38. Signature (Please fax or scan/send PDF )** | Adam Kane |
| 39. Print Name of Sponsoring Org. Official | Lake Champlain Maritime Museum |
| **40. Signature (Please fax or scan/send PDF)** | Adam Kane, LCMM Co-Executive Director |

# Grant Application to the Society for Industrial Archaeology: Advancing the Study of Submerged Industrial Sites

Adam Kane, Co-Executive Director
Lake Champlain Maritime Museum
4472 Basin Harbor Road, Vergennes, VT 05491
Phone: 802-475-2022
Email: adamk@lcmm.org

February 29, 2012

## Abstract

The Lake Champlain Maritime Museum (LCMM) seeks $2,600 in funding from the Society for Industrial Archaeology in support of innovative research in the non-invasive sonar documentation of an early twentieth century canal boat sunk in Lake Champlain. Scanning sonar units are now capable of capturing three-dimensional scans of complex underwater objects. Scanning sonars will potentially have extraordinary utility in the study of submerged industrial archaeological sites located in turbid waters where detailed archaeological documentation is impractical. Specifically, LCMM will use a Blueview BV5000 Mechanical Scanning Sonar to map a previously documented canal boat wreck in Lake Champlain. The existing drawings and measurements will provide a critical baseline for assessing the effectiveness of the scanning sonar data, and its applicability to other underwater, and particularly industrial, archaeological sites.

## Narrative

The Lake Champlain Maritime Museum proposes to systematically evaluate the applicability of using mechanical scanning sonar for the study of submerged archaeological sites. The proposed study is particularly relevant to submerged nineteenth-century industrial archaeological sites, which tend to have significant intact and exposed structural components. Many of these sites also lie in low-visibility waters due to their riverine or urban settings.

The proposed project addresses the national need to discover cost-effective and time efficient means to document underwater archaeological sites in limited visibility environments. Numbering in the thousands, turbid water archaeological sites are difficult and costly to evaluate due to to the considerable labor necessary to collect enough data to determine each site's attributes and significance.

The following narrative contains a discussion of the proposed test site, equipment and methodology.

***Test Site***

The test site is the Sloop Island Canal Boat (VT-CH-843), an intact wooden canal boat which sank in the Vermont waters of Lake Champlain, circa 1915. The Sloop Island Canal Boat, resting intact in 85 feet of clear, cold water, is a pristine example of canal-era industrial heritage. A Phase III archaeological study of this site was undertaken in 2002-2003 by LCMM as an off-site mitigation project. The study of the Sloop Island Canal Boat was used to compensate for adverse effects to five historic canal boats during the environmental clean-up of the Pine Street Canal Superfund Site in Burlington, Vermont. LCMM executed 298 research dives which resulted in a highly detailed and thorough documentation of the vessel's structure (Figure 1).

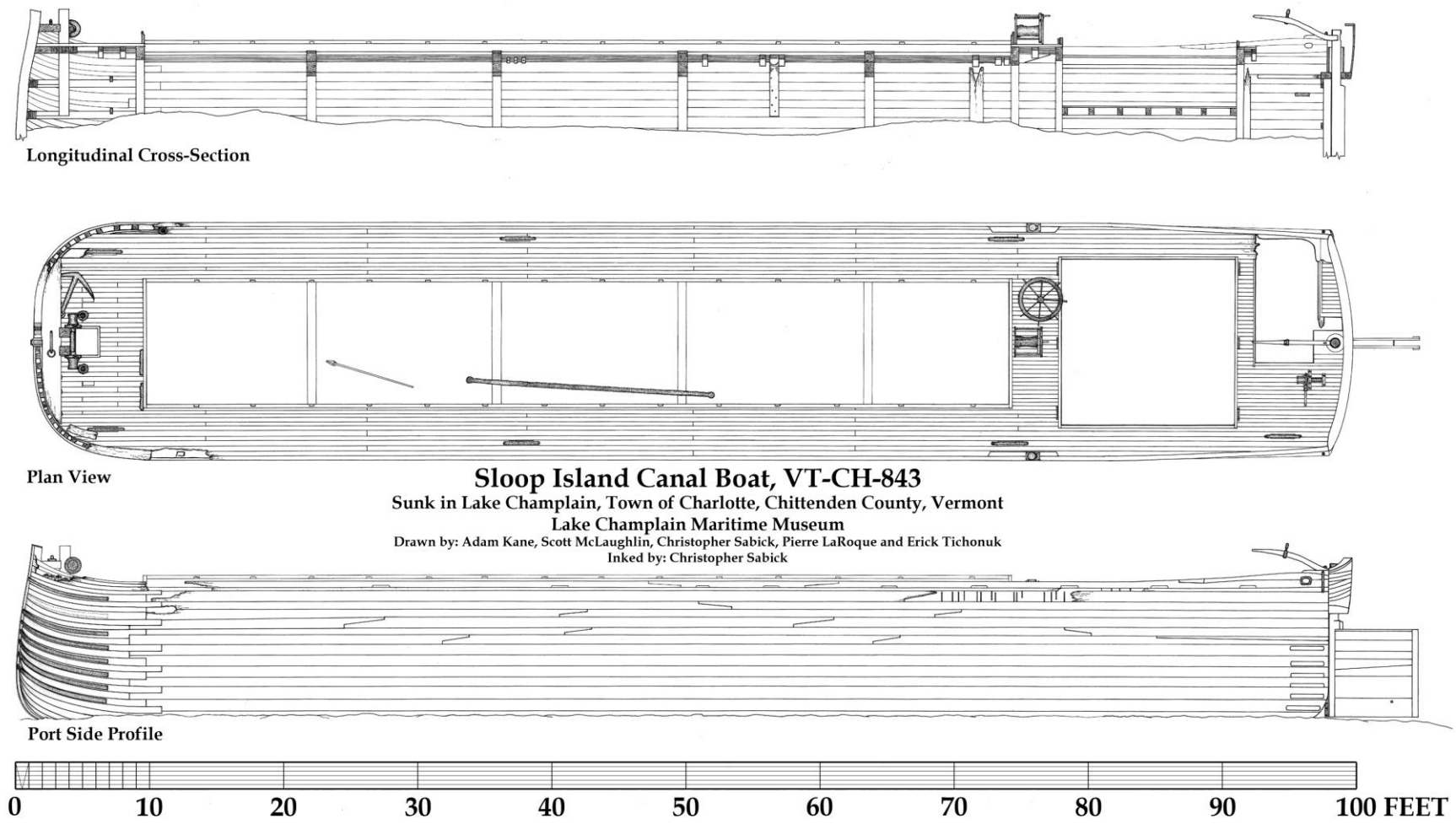


Figure 1. Archaeological drawing of the Sloop Island Canal Boat (Lake Champlain Maritime Museum Collection).

The resulting archaeological report is available for review on LCMM's website:

http://lcmm.org/mri/projects/si_canal_boat.htm

The Sloop Island Canal Boat site presents an ideal shipwreck to use as a test site because of researcher's ability to leverage the site's comprehensive, extant, traditional data set to assess the new scanning sonar technology. This data set s composed of thousands of individual measurements and dozens of scale drawings, provides an ideal baseline for systematically assessing the effectiveness of the mechanical scanning sonar.

The Sloop Island Canal Boat is part of the Lake Champlain Underwater Historic Preserve, a recreational diver access program run by the Vermont Division for Historic Preservation and administered by the Lake Champlain Maritime Museum. The Sloop Island Canal Boat is marked with a seasonal buoy facilitating dive access to the site. The site is already publicly accessible, so there are no concerns regarding site location, unauthorized diver access or archaeological sensitivity of the site.

***Equipment***

The equipment proposed for use in this project is BlueView's BV5000 3D mechanical scanning sonar. The sonar is capable of creating high resolution imagery of underwater areas, structures, and objects by creating a 3D point cloud of an underwater scene. The BV5000 can be deployed from a tripod set on the bottom leading to laser-like scanning capabilities underwater. The point cloud consists of millions of individual measurements which as a group create a three-dimensional image of the underwater subject.

BlueView Technologies has agreed to donate the use of this sophisticated and costly equipment to the project.

The BV5000 has been used with great success in the oil and gas industry, but has only been used for one archaeological project. The technology was successfully deployed in the study of the steamboat *A.J. Goddard* sunk in 1901 in LaBerge Lake in the Canadian Yukon (Figure 2). This use allowed researchers to take measurements, cross-sectional views and create 3D visualizations and virtual flights around and inside the wreck. LCMM believes that this first successful field trial has paved the way for the technology's use in an archaeological context. However, the effort did not provide a formal assessment for underwater archaeological use, nor a methodological approach which other researchers could replicate.

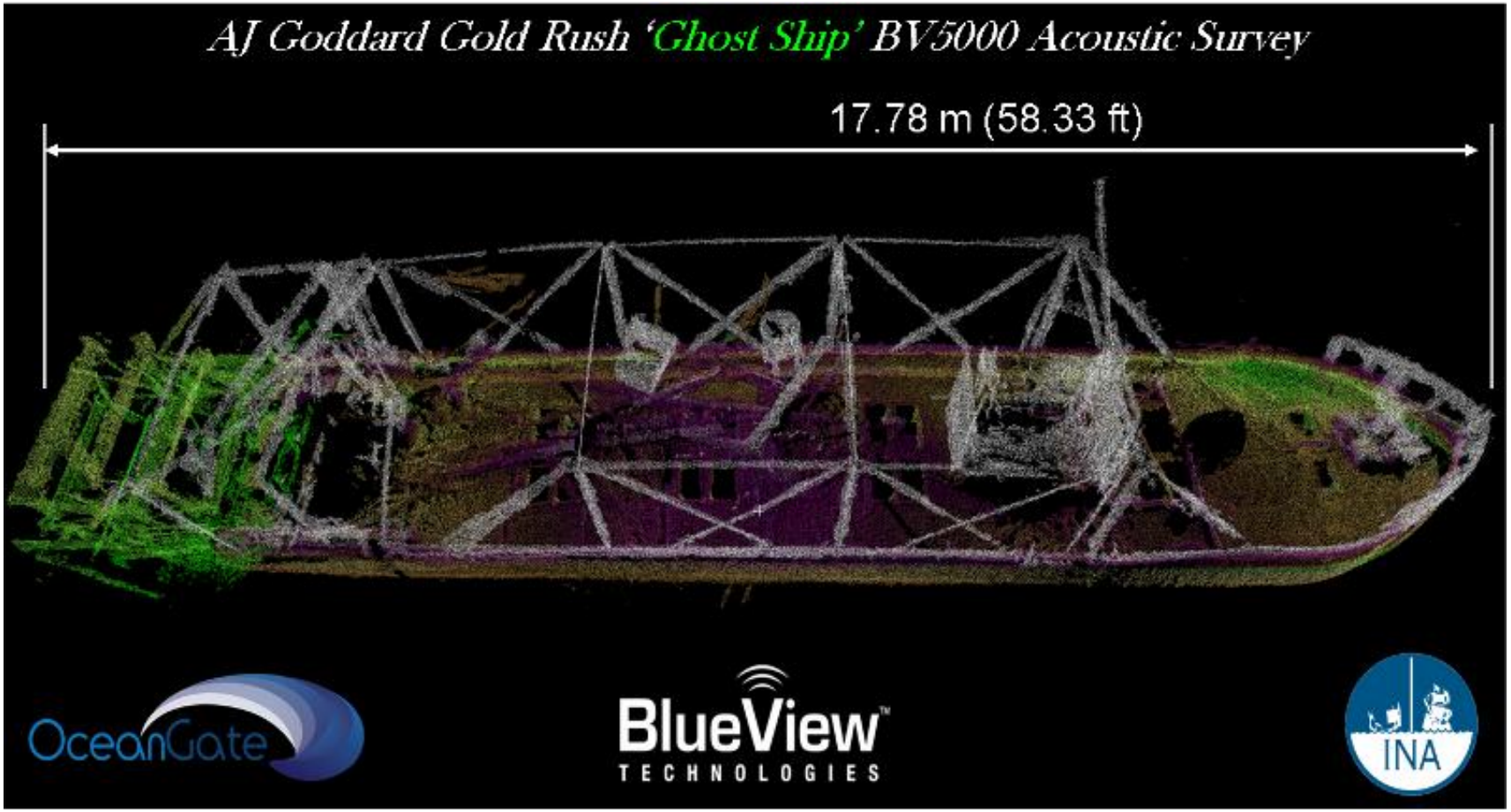


Figure 2. Mechanical scanning sonar image of the *A.J. Goddard* (Courtesy BlueView Technologies).

***Methodology***

The methodological approach to this project will seek to objectively determine the practicality, utility and accuracy of mechanical scanning sonar in documenting submerged archaeological sites. Diving operations will be undertaken by highly qualified LCMM staff with significant experience diving in Lake Champlain. Dive operations will be undertaken from LCMM's research vessel *Baldwin* (Figure 3).

Figure 3. LCMM's Research Vessel *Baldwin*.

Working with BlueView technicians, LCMM archaeological divers will use the BV5000 to record three-dimensional data from the Sloop Island Canal Boat. The methodological approach will be to deploy the instrumentation (mounted on a tridpod) on the lake bottom adjacent to and inside the wreck at 12 to 16 different locations. These scans will be meshed to create a three-dimensional point cloud of the wreck's structure.

Site Plan. The scanning sonar data will be used as the template for the drafting of a traditional archaeological site plan (view of the vessel looking directly down on the deck). The scanning sonar data will be used exclusively in this drafting effort, and the results will be compared with the site plan recorded by LCMM in 2002-2003. The comparison will show the level of detail that could be extracted from the sonar data, such as hatch dimensions and deck equipment details.

Internal Structure of Forecastle. The scanning sonar data will be used to generate a detailed view of the inside the boat's forecastle. This portion of the vessel is a small enclosure in the canal boat's bow that was used to store lines and other vessel equipment. The complex structures that support the bow and forward deck planking will be a good test of the unit's capabilities in an enclosed setting. The digital data will be used to draft traditional plan and sectional drawings, which will be compared to the drawings generated from the measured data recorded in 2002-2003. The comparison will show the level of detail that can be extracted in a small enclosed environment. Of particular interest will be the presence/absence of digital data which indicates planking and decking seams as well as its ability to capture complex curves.

Methodological Approach. To bring this technology to the forefront in the underwater archaeological community, LCMM will prepare a "best practices" document which will describe the ideal methodological approach for documenting underwater archaeological sites with a mechanical scanning sonar.

# Schedule

June 2012
*Methodology Development:* Working technicians from BlueView, LCMM staff will develop a methodological approach to record mechanical scanning sonar data imagery so that the most effective use can be made of the field research data.

August 6-17, 2012
*Field Research*: Documentation of the Sloop Island Canal Boat using the mechanical scanning sonar deployed according to the methodology developed in March.

August 22, 2012
*LCMM Blog:* Publication of Blog on the fieldwork via LCMM's website (lcmm.org), facebook site, and email newsletter.

October 2012
*Data Synthesis*: Digital rendering of sonar site plan view and transverse cross section, followed by traditional drafting of the site plan view and forecastle views based on the digital data.

November 2012
*Data Analysis*: Analysis of the digital versus traditional documentation techniques. Revision of Methodological Approach to reflect lesions learned during the field effort.

November 2012
*LCMM Newsletter:* Publication of results to a non-technical audience in LCMM's bi-annual newsletter.

December 2012
*Reporting*: Writing of Field Research and Data Analysis results, and "Best Practices" report detailing the standard methodological approach for this technology.

April 2013
*Report Submittal and Website Completion*: Submission of results to SIA and NCPTT, with creation of a webpage on LCMM's website which will contain the report, sonar imagery and visualizations.

January 2014
*SHA Conference*: Presentation of results at the Society for Historical Archaeology conference (location yet to be determined).

## Dissemination of Research

LCMM will create a webpage for this project (www.lcmm.org). Initially (August 2012) it will contain background information. In October 2012 it will be supplemented with three-dimensional visualizations and imagery. The Field Research and Data Analysis Results, the "Best Practices" document will be posted by April 2013.

**Press Outreach**

LCMM will use its contacts at the Vermont Associated Press and Vermont Public Radio to generate news coverage of the fieldwork (August 2012).

***Society for Historical Archaeology Conference***

LCMM Co-Director Adam Kane will present the results of the study at the Society for Historical Archaeology's January 2014 conference. The location for this conference has yet to be determined.

## Deliverables

**Project Report**

Tentative title: *Assessment of Mechanical Scanning Sonar for the Non-Invasive Study of Submerged Cultural Resources.* Technical report describing the methodology and results of the project. (50 copies, approximately 50 pages).

**Best Practice Document**

Tentative title: Standard Methodological Approach to the Study of Submerged Cultural Resources with Mechanical Scanning Sonar. Technical report to be employed by cultural resource managers in the study of underwater archaeological sites (50 copies, approximately 30 pages).

***LCMMnews* Article**

Article in the Fall/Winter 2012 edition of the LCMM bi-annual newsletter (distribution 8,000).

**www.lcmm.org**

Webpage on lcmm.org created for the project and results. This will also include a PDF of the Project Report, “Best Practices” document and sonar imagery.

## Bibliography

BlueView Technologies. "3D Mechanical Scanning Sonar." Accessed February 2012. http://www.blueview.com/video3Dms.html

Kane, Adam I., Joanne M. Dennis, Scott A. McLaughlin, and Christopher R. Sabick. *Sloop Island Canal Boat Study: Phase III Archaeological Investigation in Connection with the Environmental Remediation of the Pine Street Canal Superfund Site.* Vergennes, Vermont: Lake Champlain Maritime Museum, 2010.

Lake Champlain Maritime Museum. "Sloop Island Canal Boat." Accessed February 2012. http://lcmm.org/mri/projects/si_canal_boat.htm

OceanGate. "First Detailed 3D Survey of 1901 Gold Rush "Ghost" Shipwreck Unveiled." Accessed February 2012. http://www.opentheoceans.com/goddard/multimedia.htm

# Expertise of Principle Investigator

Adam I. Kane
Co-Executive Director, Lake Champlain Maritime Museum

Adam Kane is the Co-Executive Director at the Lake Champlain Maritime Museum in Ferrisburgh, Vermont. Adam has a B.A. in anthropology from Millersville University of Pennsylvania, and a M.A. in anthropology from the Nautical Archaeology Program at Texas A&M University. He has been employed at the Lake Champlain Maritime Museum since 1999, during which time he has worked on underwater archaeology projects in Lake Champlain, the Hudson River, Lake Erie, Lake Ontario, and the Red River. In 2004, his book, *The Western River Steamboat*, was published by Texas A&M University Press.

**Professional Experience**

- Co-Executive Director, Lake Champlain Maritime Museum, November 2011 – present.
- Archaeological Director, Lake Champlain Maritime Museum, November 2009 – October 2011.
- Nautical Archaeology Project Manager, Lake Champlain Maritime Museum, October 2000 - November 2009.
- Lake Champlain Underwater Historic Preserve Monitor, Vermont Division for Historic Preservation, May 2001 - present.
- Nautical Archaeologist, Lake Champlain Maritime Museum, May 2000 - October 2000.
- Nautical Archaeology Intern, Lake Champlain Maritime Museum, May 1999 - August 1999.
- Archaeological Conservator, Texas A&M University Conservation Research Laboratory, August 1998 - May 2000.
- Archaeological Consultant, R. Christopher Goodwin & Associates, Inc., August 1998 - May 2000.
- Nautical Archaeologist, Remote Sensing Specialist, and Assistant Diving Safety Officer, R. Christopher Goodwin & Associates, Inc., October 1995 - August 1998.
- Archaeologist, Cultural Heritage Resource Services, Inc., May 1995 - October 1995.

**Selected Publications**

Books

Adam I. Kane
2004 *The Western River Steamboat.* Texas A&M University Press (Nautical Archaeology Series, number 8).

Adam I. Kane (contributing author and editor)
2003 *Lake Champlain's Sailing Canal Boats: An Illustrated Journey from Burlington Bay to the Hudson River*. Lake Champlain Maritime Museum.

Recent Research Reports (2009-2011)

Kane, Adam I. and Joanne M. DellaSalla
2009 *Phase I Underwater Archaeological Survey for the Proposed Dredging of Lake George's Finkle Brook Delta in the Hamlet of Bolton Landing, Warren County, New York*. Prepared by the Lake Champlain Maritime Museum for the Lake George Association.

Kane, Adam I., Joanne M. DellaSalla, Scott A. McLaughlin and Christopher R. Sabick
2010 *Sloop Island Canal Boat Study: Phase III Archaeological Investigation in Connection with the Environmental Remediation of the Pine Street Canal Superfund Site*. Lake Champlain Maritime Museum, Ferrisburgh, VT. Prepared for USEPA Region 1 and the Vermont Division for Historic Preservation.

Kane, Adam I., Joanne M. DellaSalla, and Brian R. Spinney
2009 *Phase I Underwater Archaeological Survey for the Proposed Dredging of Lake George's Hague Brook Delta in Hague, Warren County, New York*. Prepared by the Lake Champlain Maritime Museum for the Lake George Association.

Kane, Adam I., Joanne M. Dennis, Sarah L. Tichonuk, and Christopher F. Wright
2011 *Phase IB Underwater Archaeological Report for the Onondaga Lake Bottom, Subsite of the Onondaga Lake Superfund Site, Onondaga County, New York*. Prepared by the Lake Champlain Maritime Museum for Parsons, Inc. and Honeywell.

Kane, Adam I., Christopher R. Sabick, and Joanne M. Dennis
2010 *Phase 1B Oil Bollard Survey at Burlington Harbor, Burlington, Chittenden County, Vermont*. Prepared by the Lake Champlain Maritime Museum for the US. Army Corps of Engineers, New York District.

## Expertise of Research Team

The Lake Champlain Maritime Museum (LCMM) is a 501(c)3 located in Vergennes, Vermont. The museum's mission is to preserve and share the history and archaeology of Lake Champlain. LCMM has an archaeological research arm known as the Maritime Research Institute. The Maritime Research Institute is involved in four primary areas of underwater cultural resource study and management. These include archaeological projects on Lake Champlain and beyond; conservation of artifacts from submerged environments; assisting in the management of shipwrecks on Lake Champlain; and providing archaeological services to other organizations. The Maritime Research Institute employs four-full time and three part-time staff, and varying number of interns.

Currently, the Maritime Research Institute is participating in the following projects:

Hudson River PCBs Superfund Site, Archaeological consultant to USEPA in the effort to remove PCBs from the upper Hudson River (2002-2011)

Onondaga Lake Superfund Site, Archaeological consultant to Honeywell in the management of cultural resources in the Onondaga Lake clean-up (2008-2011)

Lake George Asian Clam Rapid Response Taskforce, Participating institution in the effort to eradicate invasive Asian Clams from Lake George (2010-2011)

Vergennes Shipyard Phase IB Archaeological Investigation, Grant recipient from the NPS' American Battlefield Protection Program in the effort to locate a War of 1812 shipyard in Vergennes, Vermont (2011)

Gunboat *Spitfire* Management, Management partner with the U.S. Navy in the management of the Revolutionary War Gunboat *Spitfire* which LCMM located in Lake Champlain in 1996 (1996-2011)

Zebra Mussels and the Effects on Historic Shipwrecks, Participating institution with funding from the NPS' American Battlefield Protection Program, to determine the effect of zebra mussel infestations on shipwrecks (1999-2011)

**Arthur B. Cohn, Co-Founder and Special Projects Advisor**
Art Cohn is the former Executive Director and Co-Founder of the Lake Champlain Maritime Museum. Cohn has a B.A. in sociology from the University of Cincinnati in Cincinnati, Ohio, and a J.D. from Boston College Law School. He is a professional diver and has coordinated and participated in numerous Lake Champlain archaeological projects over the past twenty years. This includes the discovery of the steamboat *Phoenix* and the subsequent *Phoenix* Project that took place from 1980-1981. Since 1978 Cohn has participated in the numerous projects as Principal Investigator. $0 $0 Beginning in 1996, Cohn acted as the Principal Investigator for the multi-year Lake Survey Project that mapped the lake bottom using side scan sonar and helped to identify and verify over 300 shipwrecks on the bottom of Lake Champlain. Additionally, Mr. Cohn managed numerous federal grants in his tenure as the LCMM's Executive Director. Most recently, he oversaw a grant from the Navy Legacy Program to develop a management plan to ensure the preservation of the Revolutionary War gunboat *Spitfire*."

To help share and protect the underwater cultural heritage of Lake Champlain, Cohn has been the chief advocate for the Lake Champlain Underwater Historic Preserve System since its inception in 1985. He has formally coordinated that program since 2000 for the Vermont Division for Historic Preservation. In 2000 and 2001 Cohn was a Member of the U.S. Delegation to the United Nations Educational, Science and Cultural Organization's convention for the protection of underwater cultural heritage. He also serves as an advisor to Vermont Senator Patrick Leahy on matters involving cultural resources and/or Lake Champlain, as well as an Adjunct Assistant Professor in Maritime History and Nautical Archaeology at both the University of Vermont and Texas A&M University.

**Christopher Sabick, Nautical Archaeologist**
Christopher R. Sabick is a Nautical Archaeologist and the Director of Conservation at the Lake Champlain Maritime Museum's Maritime Research Institute. He earned a B.A. in history and anthropology from Ball State University in Muncie, Indiana, and a M.A. in anthropology from the Nautical Archaeology Program at Texas A&M University. He has worked at the Lake Champlain Maritime Museum since 1999, during which time he has co-authored and edited numerous archaeological reports. Mr. Sabick has extensive black water and low-visibility diving experience in the Hudson River and Lake Champlain.

**Joanne Dennis, Archaeologist**
Joanne M. Dennis has been an archaeologist with the Lake Champlain Maritime Museum's Maritime Research Institute (MRI) since 2005. She earned a B.A. in anthropology and spanish from the University of Vermont and a M.A. in anthropology from the University of Denver. Joanne assists the MRI in all aspects of archaeological projects, from research to fieldwork to

report production. She has been in the archaeology field since 1998, and has worked in Vermont, Colorado, the Caribbean and South America.

**Sarah L. Tichonuk, Nautical Archaeologist**
Sarah Tichonuk joined the Lake Champlain Maritime Museum in 2002. Sarah has a B.A. in archaeology from Boston University, and worked as a crew chief for a contract archaeology firm in upstate New York. At the Maritime Museum, Sarah has worked various capacities including nautical archaeologist, Education Director, graphic designer, and webmaster. She holds a Divemaster certification through the National Association of Underwater Instructors.

**Paul Willard Gates, Conservation Lab Technician**
Paul Gates joined the Lake Champlain Maritime Museum in 2008. He has a B.A. from the University of Vermont in History and Minor in Archaeology. Paul is also an EMT for Charlotte Rescue and serves on the board of his family's foundation.

**Alex Lehning, Conservation Lab Technician**
Alex Lehning initially joined the LCMM as an Intern in 2008, and currently works as a Conservation Technician. Alex earned his B.A. in History from the University of Maine and M.A. in History from the University of Vermont. He conducts historical research for museum projects in addition to his work with artifact conservation and documentation.

**Pierre LaRocque, Archaeological Diver & Logistical Coordinator**
Pierre LaRocque has been affiliated with the Lake Champlain Maritime Museum since 1995 and a NAUI scuba diving instructor for the past 20 years. He graduated with a B.A. from the University of Vermont where he majored in history and anthropology with an emphasis in nautical archaeology. LaRocque is a Monitor for the Lake Champlain Underwater Historic Preserve. His experience with tri-mix/deep diving, ice diving, and underwater photography and videography He also holds a USCG Captain's Master's License with a towing endorsement.

# Budget

The total budget for the proposed archaeological study is $49,733.75, of which LCMM is requesting $2,600 from the Society for Industrial Archaeology. The other principal funders for the project are the LCMM Research Endowment ($2,160), LCMM's in-kind research vessel contribution ($4,500), BlueView Technology's in-kind contribution of all equipment rental fees ($15,750) and funding from the National Park Service's National Center for Preservation Technology and Training ($24,723.75).

The funds requested from the Society for Industrial Archaeology will provide critical support for the purchase of two integral project components. A laptop computer ($2,100) is needed to effectively collect the highly detailed point cloud data from the mechanical scanning sonar. Additionally, LCMM is requesting travel support in the amount of $500 for an airline ticket to the January 2013 Society for Historical Archaeology's annual conference to present the study's results.

**Personnel**

| Person | Daily Rate | Days | Subtotal | Cash Donations | In-Kind Donations | SIA Support | NCPTT Support |
|---|---|---|---|---|---|---|---|
| Co-Executive Director | 250 | 22 | 5500 | 0 | 0 | 0 | 5500 |
| Special Projects Advisor | 250 | 15 | 3750 | 0 | 0 | 0 | 3750 |
| Nautical Archaeologist | 185 | 25 | 4625 | 0 | 0 | 0 | 4625 |
| Nautical Archaeologist | 185 | 20 | 3700 | 0 | 0 | 0 | 3700 |
| Chief Financial Officer | 212 | 5 | 1060 | 0 | 0 | 0 | 1060 |
| **Subtotal** | | | **18635** | **0** | **0** | **0** | **18635** |

**Fringe Benefits**

| Person | Item | Daily Rate | Day | Subtotal | Cash Donations | In-Kind Donations | SIA Support | NCPTT Support |
|---|---|---|---|---|---|---|---|---|
| Co-Executive Director | Fringe Benefits | 62.5 | 22 | 1375 | 0 | 0 | 0 | 1375 |
| Special Projects Advisor | Fringe Benefits | 62.5 | 15 | 937.5 | 0 | 0 | 0 | 937.5 |
| Nautical Archaeologist | Fringe Benefits | 46.25 | 25 | 1156.25 | 0 | 0 | 0 | 1156.25 |
| Nautical Archaeologist | Fringe Benefits | 46.25 | 20 | 925 | 0 | 0 | 0 | 925 |
| Chief Financial Officer | Fringe Benefits | 53 | 5 | 265 | 0 | 0 | 0 | 265 |
| **Subtotal** | | | | **4658.75** | **0** | **0** | **0** | **4658.75** |

**C. Travel**

| Person | Item | Cost | Days | Subtotal | Cash Donations | In-Kind Donations | SIA Support | NCPTT Support |
|---|---|---|---|---|---|---|---|---|
| All Field Staff (4) | Lunch during fieldwork (5 days) | 80 | 5 | 400 | 0 | 0 | 0 | 400 |
| All Field Staff (4) | Mileage during fieldwork | 66 | 5 | 330 | 0 | 0 | 0 | 330 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Co-Executive Director | Airline ticket SHA 2013 | 500 | 1 | 500 | 0 | 0 | 500 | 0 |
| Co-Executive Director | Perdiem during SHA Conference | 140 | 4 | 560 | 560 | 0 | 0 | 0 |
| **Subtotal** | | | | **1790** | **1060** | **0** | **0** | **730** |

**D. Equipment**

| **Item** | **Rent** | **Subtotal** | **Cash Donations** | **In-Kind Donations** | **SIA Support** | **NCPTT Subtotal** |
|---|---|---|---|---|---|---|
| BlueView BV5000 | 2 | 15750 | 0 | 15750 | 0 | 0 |
| BlueView BV5000 Shipping | 2 | 700 | 700 | 0 | 0 | 0 |
| BlueView BV5000 Insurance | 2 | 900 | 900 | 0 | 0 | 0 |
| Research Vessel Baldwin | 1 | 4500 | 0 | 4500 | 0 | 0 |
| **Subtotal** | | **21850** | **1600** | **20250** | **0** | **0** |

**E. Supplies**

| **Item** | **Subtotal** | **Cash Donations** | **In-Kind Donations** | **SIA Support** | **NCPTT Support** |
|---|---|---|---|---|---|
| SCUBA Tank Fills | 400 | 0 | 0 | 0 | 400 |
| Dive Equipment | 300 | 0 | 0 | 0 | 300 |
| Laptop | 2100 | 0 | 0 | 2100 | 0 |
| **Subtotal** | **2800** | **0** | **0** | **2100** | **700** |

**I. Total Direct Charges**

| **Category** | **Subtotal** | **Cash Donations** | **In-Kind Donations** | **SIA Support** | **NCPTT Subtotal** |
|---|---|---|---|---|---|
| Personnel | 18,635 | 0 | 0 | 0 | 18,635 |
| Fringe Benefits | 46,58.75 | 0 | 0 | 0 | 4,658.75 |
| Travel | 1,790 | 560 | 0 | 500 | 730 |
| Equipment | 21,850 | 1600 | 20,250 | 0 | 0 |
| Supplies | 2,800 | 0 | 0 | 2100 | 700 |
| **Totals** | **49,733.75** | **2,160** | **20,250** | **2,600** | **24,723.75** |