

The Ohio Academy of Science

2000 District Science Days

The Ohio Academy of Science

1500 W. Third Ave.
Ste. 223
Columbus, OH
43212-2817
Phone or FAX
(614) 488-2228
Outside 614, toll free,
if needed,
1-800-OHIOSCI
oas@iwaynet.net
<http://www.ohiosci.org>

MR. DAVID M. WEANER
Director, Junior
Academy Council
Westerville North HS
950 County Line Rd.
Westerville OH 43081
(614)895-6060
dmweaner@iwaynet.net

MRS. CONNIE HUBBARD
Acting Assistant
Director
Junior Academy
Council
Hoover HS
525 Seventh St. NE
N. Canton, OH 44720
(330)497-5620
chubbard@raex.com

State Science Day
Ohio Wesleyan
University
April 29, 2000
April 28, 2001

DR. MICHAEL G. GROTE
State Science Day
Director
Ohio Wesleyan Univ.
Dept of Education
Delaware OH 43015
(740) 368-3561
mggrote@cc.owu.edu

District Councilpersons

District 1 Defiance College
March 25, 2000
Dr. Karen McCracken
Defiance College
Div. of Science and Math
Defiance, OH 43512
(419) 783-2494
karenmc@bright.net

Mr. James Short
Gorham Fayette HS
PO Box 309
Fayette OH 43521
(419) 237-2114
Fay_ACA_JS@
nwoca.oecn.ohio.gov

District 2 Univ. of Toledo
March 25, 2000
Dr. Mark Camp
University of Toledo
Dept. of Geology
Toledo OH 43606-3390
(419) 530-2398
mcamp@geology.utoledo.edu

Ms. Mikell Hedley
Central Catholic HS
4531 Woodland Lane
Sylvania OH 43560
(419) 255-2280
mhedley@uoft02.utoledo.edu

District 3 OSU Marion
March 25, 2000
Dr. Brian W. McEnnis
OSU-Marion
1465 Mt. Vernon Ave.
Marion OH 43302-5695
(740)389-6786
mcennis.1@osu.edu

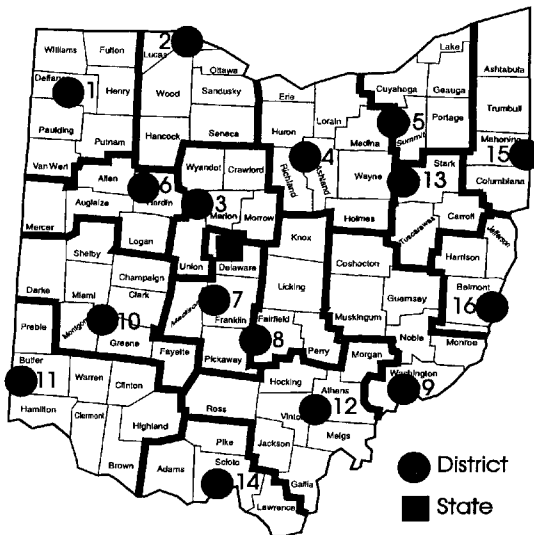
Ms. Carol White
Baker MS
400 Pennsylvania Ave.
Marion, OH 43302
(740) 389-6362
caw6@marion.net

District 4 Ashland Univ.
March 18, 2000
Dr. Michael Hudson
Ashland University
Ashland, OH 44805
(419) 289-5270
mhudson@ashland.edu

Mr. Jeff Steele
Mapleton HS
1021 Columbus Circle N.
Ashland, OH 44805
(419) 945-2188
MAPL_STEELE@tccsa.ohio.gov

District 5 Univ. of Akron
March 18, 2000
Dr. Ali Dhinjwala
The University of Akron
Dept. of Polymer Science
Akron OH 44325
(330) 972-6246
alid@polymer.uakron.edu

Mrs. Toni Miller
Springfield HS
721 Northwood Dr.
Uniontown OH 44685
(330)972-6858
tmiller@aol.com



District 6 Ohio Northern Univ.
March 18, 2000
Prof. Terry Keiser
Ohio Northern University
Dept. of Biological Sciences
Ada, OH 45810-1599
(419) 772-2327 or 2325
t-keiser@onu.edu

Mr. Spencer E. Reames
Benjamin Logan HS
209 Blair Ave.
Bellefontaine, OH 43311
(937) 592-1666
sreames@educator.mci.net

District 7 Columbus State Community College
March 18, 2000
Dr. Michael Rennekamp
Columbus State Comm. Coll.
Biological & Physical Sci.
550 E. Spring St.
Columbus, OH 43215-1609
(614) 287-5012
mrenneka@cscscc.edu

Mr. Larry Hohman
Willard Grizzell MS
8705 Manley Rd.
Dublin OH 43017
(614) 798-3569
hohmanlr@iwaynet.net

District 8 OU-Lancaster
March 11, 2000
Dr. Steve Nerney
Ohio University-Lancaster
1570 Granville Pike
Lancaster OH 43130-1097
(740) 654-6711 Ext. 229
nerney@ohiou.edu

Mr. David P. Thrush
Fairfield Union HS
6675 Ireland Rd.
Lancaster OH 43130
(740) 536-7306
thrush@greenapple.com

District 9 Marietta College
March 18, 2000
Prof. David Freeman
Marietta College
Dept. of Petroleum Engineering
Marietta, OH 45750
(740) 376-4778
freemand@mcnet.marietta.edu

Mr. Steve Mencer
Meadowbrook MS
58607 Marietta Rd.
Bvesville, OH 43723
(740) 685-2561

District 10 Wright State Univ.
March 25, 2000
Dr. Lois Cook
Wright State University
College of Science &
Mathematics
Dayton, OH 45435
(937) 775-3539
lois.cook@wright.edu

Ms. Phyllis Frysinger
Miami View School
230 Old Clifton Rd.
S. Charleston, OH 45368
(937) 462-8364
ptrysin@cfanet.com

District 11 Miami University
April 1, 2000
Ms. p. Helen Stevenson
Miami University
Physics Dept.
Oxford, OH 45056
(513) 529-1859
stevensph@muohio.edu

Ms. Donna Davis
St. Joseph School
Second & Hanover Streets
Hamilton OH 45011
(513) 863-8758
db_davis@hotmail.com

District 12 Ohio University
March 4, 2000
Dr. James Y. Tong
Ohio University
Department of Chemistry
Athens, OH 45701-2979
(740) 597-2754
tong@ohiou.edu

Mr. Jason A. Clark
Zane Trace HS
946 St. Rt. 180
Chillicothe OH 45601
(740) 775-1809
cjc@bright.net

District 13 Walsh University
March 25, 2000
Dr. Michael Dunphy
Walsh University
2020 Easton St. NW
N. Canton OH 44720-3396
(330)490-7200
dunphy@raex.com

Mrs. Connie Hubbard
Hoover HS
525 Seventh St. NE
N. Canton, OH 44720
(330) 497-5620
chubbard@raex.com

District 14 Shawnee State University
March 18, 2000
Ms. Judy Meeker
Shawnee State University
Massie Hall B50
Portsmouth, OH 45662
(740) 355-2411
jmeeker@shawnee.edu

Ms. Sherlyene Rice
Clay HS
44 Clay High St.
Portsmouth, OH 45662
(740) 354-6644
RriceS@clay.k12.oh.us

District 15 Youngstown State University
March 11, 2000
Dr. Jeffrey Dick
Youngstown State University
Department of Geology
Youngstown, OH 44555-0001
(330) 742-3612
jcdick@cc.yzu.edu

Ms. Madonna Chism
Community Affairs Rep.
East Ohio Gas Company
1165 Rayen Ave.
Youngstown OH 44502-1394
(330) 742-8104
Madonna_J_Chism@corp.cng.com

District 16 Belmont Technical College
March 25, 2000
Ms. Rita Fulton
Belmont Technical College
Dept. of Biology
120 Fox-Shannon Pl.
St. Clairsville, OH 43950
(740) 695-9500 Ext. 1100
RFulton@belmont.cc.oh.us

Mr. Vince Thornburg
Shadyside HS
54040 Fulton Hill Rd.
Bellairre OH 43096
(740) 676-7513

Visit the Academy's Website at
<http://www.ohiosci.org>

The Ohio Journal of Science

Author's Instructions for Preparation of Manuscripts

The Ohio Journal of Science considers for publication **solicited Book Reviews** and **Research Reviews**, and **unsolicited Brief Notes** and **Research Reports**. Solicited submissions will be requested by the editor or member of the editorial board. Book reviews will be requested of experts in the subject matter of the book to be reviewed. Research Reviews will be requested to serve as extensive surveys of the literature of an area of science in which Academy members have an interest.

Unsolicited submissions, in the form of presentations of quantitative or qualitative data pertinent to any of the sections of the Academy listed inside the front cover, will be considered for peer review. Brief notes are manuscripts that are less than 2 printed pages (approximately 6 typed pages) and contain no more than one table, figure or other type of illustration. The editor will identify papers which meet these criteria as Brief Notes if not already categorized as such by the author. Research Reports are those papers which are longer than 2 pages or contain more than one illustration.

All manuscripts will be organized as follows:

Page 1 – Title, Author(s), Running Head, Abstract

Page 2 and remainder – Introduction, Materials and Methods, Results, Discussion, Acknowledgments, Literature Cited, Tables, Figure Legends, Figures.

STYLE. The CBE Manual for Authors, Editors, and Publishers, 6th ed. is used for editorial decisions with regard to style. Manuscripts should be typewritten using 1 inch margins on 8.5 x 11 inch paper. Text should be left-justified using elite print (twelve characters per inch). Three copies should be submitted. Manuscript should be double-spaced throughout, including the title and abstract. Arabic numerals should be used in preference to words when the number designates anything that can be counted or measured (7 samples, 43 species). One exception to this use is that numerals are not used to begin a sentence (Twenty-one species were found in . . .). The 2nd exception is when 2 numeric expressions are adjacent in a sentence. The number easiest to express in words should be spelled out and the other left in numeric form (The sections were divided into eight 4-acre plots.).

TITLE, AUTHOR(S), AFFILIATION(S). The first page of the manuscript should contain the title, author(s) name(s), the affiliation of the author(s) at the time the research was carried out, a shortened title (running head), and the abstract. The title must be typed in upper and lower case letters as it will appear when typeset. Name(s) of the author(s) should be typed in capital letters below the title. The address (department, institution, city, state, postal code, country if not USA) should appear below the name of the author(s). If more than one institution is to be credited, they should appear in the order of the authors' affiliation. A running head of not more than 38 letters and spaces should be typed in capital letters between the address and the abstract.

ABSTRACT. The abstract should summarize the main conclusions and any new methods or procedures critical to the results of the study. It should be 250 words or less.

INTRODUCTION. The introduction should describe the knowledge that gave rise to the question examined by, or the hypothesis posed for the research.

MATERIALS AND METHODS. This section should describe the research design, the methods and materials used in the research (subjects, their selection, equipment, laboratory or field procedures), and how the findings were analyzed.

RESULTS. The text of the results should be a descriptive narrative of the main findings, of the reported study. This section should not list tabulated data in text form. Reference to tables and figures included in this section should be made parenthetically in the text.

DISCUSSION. This section should compare and contrast the data collected in the presented study with that previously reported in the literature. Unless there are specific reasons to combine the two, as

explained by the author in the letter of transmittal, Results and Discussion should be two separate sections.

ACKNOWLEDGMENTS. Colleagues and/or sources of financial support to whom thanks are due for assistance rendered in completion of the research or preparation of the manuscript should be recognized in this section rather than in the body of the text.

LITERATURE CITED. References to scientific literature should be arranged alphabetically by first author's last name using the Name/Year (N-Y) method as described in the CBE Manual.

Journals

Author(s). Year. Article title. Journal title volume number (issue number): inclusive pages.

Thomison JB. 1988. Uniform requirements for manuscripts. *South Med J* 81(8):947-52.

Form of citation: (Thomison 1988)

Books

Author(s). Year. Title. Place of publication: publisher name. Number of pages.

Voet D, Voet JG. 1990. *Biochemistry*. New York: J Wiley. 1223 p.

Form of citation: (Voet and Voet 1990)

Multiple author citation: (Steiner and others 1992)

TABLES. Tables must be typed double-spaced, one table to a page, numbered consecutively, and placed in the manuscript after Literature Cited. Since tables must be individually typeset, consolidation of data into the smallest number of tables is encouraged. A horizontal double underline should be made beneath the title of the table, and single underlines should be made the width of the table below the column headings and at the bottom of the table. Do not use vertical lines, and do not place horizontal lines in the interior of the table. Footnotes should be used to clarify possible questions within the table, and should be noted by asterisks, daggers, or other symbols to avoid confusion with numerical data.

FIGURES. All illustrations are referred to as "Figures" and must be numbered consecutively. Figures may be photographs, hand-drawn or computer generated drawings in black ink. Each figure should be identified along the top edge with the name of the author(s) and figure number, and on the back with name of author(s) and manuscript title. Illustrations other than those generated by the author(s) must bear permission for use and credit to the originator. **ORIGINAL ARTWORK WILL NOT BE RETURNED UNLESS SPECIFICALLY REQUESTED AT TIME OF SUBMISSION.** Each figure must have a complete legend. The legend should not be placed on the figure, but should be typed in order, double-spaced, on a separate sheet which precedes the figures in the manuscript. Figures should be referred to parenthetically in the text, for example (Fig. 1). The size and proportion of each illustration should be suitable for reduction. Excessive white space should be avoided. Illustrations will be reduced to one column width (3 and 3/8 inches) or two column width (7 inches) at the discretion of the editor. Lettering should be done of a size to ensure that it can be read after reduction. On maps and other illustrations where original size is a concern, a graphic scale should be incorporated into the figure.

FOOTNOTES. Text footnotes should not be used with the following exceptions. A footnote to the title will be added editorially to state the dates of manuscript submission and revision. A footnote to name(s) of author(s) may be used to indicate present address different from that at which the research was done, or to indicate the author to whom inquiries should be directed. All other material or comments must be incorporated into the text. Literature Cited should not be inserted as footnotes. Footnotes to tables are permissible, and are encouraged to promote clarity.

Attention to the above instructions will minimize the need for revision and editorial correction, and will shorten the time from submission to publication. Any questions which are not answered by these instructions, or by consulting the **CBE Manual for Authors, Editors, and Publishers, 6th Edition**, should be addressed to the editor.

SCIENCE ON A DEEP OCEAN SHIPWRECK

CHARLES E. HERDENDORF

The Ohio State University

THOMAS G. THOMPSON and ROBERT D. EVANS

Columbus-America Discovery Group

A FIVE-YEAR SCIENTIFIC INVESTIGATION of a site of a sunken ship on the North Atlantic seafloor, 270 km off Cape Fear, North Carolina at a depth of 2,200 meters, occurred during recovery operations on the nineteenth-century steamship *SS Central America* which sank in an 1857 hurricane while carrying passengers and cargo—including millions of dollars of gold—on its way to New York from the California gold fields.

Activities in the disciplines of oceanography, marine geology, marine biology, materials science, and undersea archaeology, were undertaken with the tele-directed submersible robot, *Nemo*. The study included field observations at the site (recorded in over 3,000 hours of videotape and 25,000 still photographs), examination of hundreds of deep ocean specimens and artifacts, and analysis of several experiments deployed on the seafloor.

Resting on a gentle slope of the Blake Ridge, the shipwreck environment was cold, lightless, oxygen-rich, and flushed by moderate currents. The sediments were a foraminiferal-

pteropod ooze, deposited at a slow rate (1.7 cm/1,000 years). A diverse community of invertebrates and fishes colonized the shipwreck deriving from it food, cover and a place of attachment. This deep-ocean oasis supported a greater variety and concentration of animal life than did the surrounding ooze habitat. The timbers of the shipwreck were degraded by wood-boring bivalves. The iron machinery was extensively corroded and mobilized into flow structures (rusticles) by iron-oxidizing bacteria.

Passenger luggage recovered from the shipwreck contained artifacts which provided insight about the lifestyles of the voyagers during the Gold Rush. This project demonstrated that a holistic approach to a deep-ocean site of historic importance can provide understandings of the interrelated processes which affect cultural deposits on the abyssal seafloor and the marine life that they foster.

USE THIS FORM TO PURCHASE . . .

this Special Issue of *The Ohio Journal of Science*.

This issue is an easy-to-read, well illustrated (over 170 illustrations—*more than 100 in brilliant color*), comprehensive report on oceanography, marine geology, marine biology, materials science, and undersea archaeology.

The Ohio Academy of Science

Please Type or PRINT

Circle title: Ms. Mrs. Mr. Dr. Prof.

Name _____

Employer, organization, school, or institution _____

Department, Street or P.O. Box _____

City/State/Zip _____

Is this a home address? Yes No

County _____

Phone (____) _____ FAX (____) _____

FIELD OF INTEREST _____

Please Check Appropriate Lines

- \$1,000 LIFE (installment plan available)
- \$1,000 Sponsor of the Academy
- \$750 Sustainer of the Academy
- \$500 Advocate of the Academy
- \$500 Corporate Member
- \$250 Supporter of the Academy
- \$100 Institution, Organization or Agency Member
- \$100 Friend of the Academy
- \$85 Booster of the Academy
- \$75 Family (maximum of 3 persons)
- \$65 Regular Member
- \$30 Retired (age 59 & over) Member with Journal
- \$30 College Student with Journal
- \$30 Pre-college Student with Journal
- \$15 Retired Member without Journal
- \$15 Pre-College Student without Journal

\$20

Member rate for copies of the "Shipwreck" issue

\$35

Non-member rate for copies of the "Shipwreck" issue

Method of Payment

- Enclosed is a check made payable to **The Ohio Academy of Science** for \$_____.
- Please charge my credit card \$_____ plus a \$2.00 processing fee.

If paying by credit card, please P R I N T your name as it appears on your card.

First _____ Middle _____ Last _____

VISA



MASTERCARD



Card Number

Exp. Date _____

Signature _____

PLEASE RETURN TO:

The Ohio Academy of Science
1500 W. Third Ave. Ste. 223
Columbus OH 43212-2817

Phone or FAX 1-800-OHIOSCIence