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# *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.

# STONE

*The Ohio State University's Island Campus*

Stone Laboratory is the Lake Erie research and teaching laboratory for the Ohio Sea Grant College Program. Located on the 6.5-acre Gibraltar Island in Put-in-Bay harbor, this facility is the oldest freshwater biological field station and research laboratory in the United States. Since its establishment in 1895, both students and professional biologists have conducted significant research focusing on the ecology of Lake Erie and the Great Lakes region.

Students earn college credit through classroom, laboratory, and field studies, while gaining a comprehensive background in freshwater systems and information on the unique environmental attributes of Lake Erie.

## SUMMER COURSES 2003

*All dates will be posted on web site as they are confirmed.*



### UPPER-LEVEL COURSES

*Designed for undergraduate and graduate students in biological sciences, education, and natural resources; professional biologists, and ecologists; and biology and general science teachers.*

Classes meet three days a week

#### TERM 1 — June 22 - July 23

- Aquatic Entomology
- Field Zoology
- Ichthyology
- Limnology

#### TERM 2 — July 24 - Aug. 23

- Fish Ecology
- Higher Aquatic Plants

### OTHER

Classes meet daily for one week

NEW Field Plant Pathology (two weeks)

NEW Herpetology

NEW Nature Photography

- Waterfowl Ecology
- Ichthyoplankton Identification Workshop (one day)

### COURSES FOR EDUCATORS

*Designed for classroom teachers, non-formal educators, and education majors with senior rank by summer 2003.*

Classes meet daily for one week

- Aquatic Environmental Science for Teachers
- Geologic Setting of Lake Erie
- Global Change Education
- Great Lakes Education Workshop
- Insect Biology for Teachers
- Ornithology for Teachers
- Principles of Oceanography for Science Teachers
- Stream Ecology for Teachers

### INTRODUCTORY COURSES

*Open to college and select high school students.\**

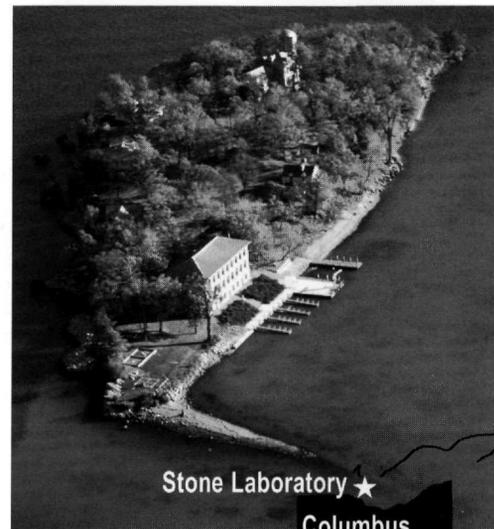
Classes meet daily for one week

- Aquatic Biology (offered four times)
- Field-Based Oceanography
- Insect Biology
- Local Flora
- Study of Birds

*\*To qualify, high school students must have completed their sophomore year, be 15 years of age or older, and have completed one course of high school biology prior to the beginning of the course.*



# LAB



Stone Laboratory ★

Columbus Office ★

## INFO SESSIONS AT THE OHIO STATE UNIVERSITY CAMPUS

Detailed information about Stone Laboratory and the Summer 2003 program will be presented on the Columbus campus on the following dates, times, and locations:

Thursday, November 21, 2002

Tuesday, January 14, 2003

Tuesday, February 4, 2003

Thursday, February 20, 2003

Enarson Hall from 10:30 – 11:30 a.m.

154 W. 12th Ave.

Stone Laboratory from 6:30 – 7:30 p.m.

Administrative Office, 1314 Kinnear Rd.



# www.sg.ohio-state.edu

Updates on courses, instructors, and application materials.

Sea Grant College Program, Center for Lake Erie Area Research, and Great Lakes Aquatic Ecosystem Research Consortium (12 Ohio colleges). He received his B.S. and M.S. in fisheries management and Ph.D. (1976) in environmental biology from OSU. He is author of over 100 technical reports and journal articles (first 1973 OJS) and a frequent lecturer on Lake Erie, aquatic nuisance species, Great Lakes research needs, and the importance of science education, research, and communicating with non-scientists. He has judged and awarded 43 Stone Laboratory scholarships at State Science Day since 1996 and is a past president and judge for the OSU Chapter-Sigma Xi. Leadership positions include: President-Elect, National Association of Marine Laboratories; Past Co-Chair and current member, Council of Great Lakes Research Managers, International Joint Commission, U.S. State Department; Board of Directors, Great Lakes Protection Fund.

#### **Government-at-Large**

##### **NORMAN R. FAUSEY**

Norman R. Fausey is a Soil Scientist employed by the USDA, Agricultural Research Service. He is the Research Leader for the Soil Drainage Research Unit located at the Ohio State University. Dr. Fausey is an active member of the Soil and Water Conservation Society, The American Society of Agricultural Engineers, the American Society of Agronomy and the Soil Science Society of America. He has served as the President of the All Ohio Chapter of SWCS, President of the Ohio Section of ASAE and on the Board of Directors of ASAE. He is a member of the Graduate Faculty at the Ohio State University and has served as advisor and graduate committee for numerous MS and PhD students. He is a Fellow of The Ohio Academy of Science.

##### **STEVEN HINDALL**

Steven Hindall is the District Chief or the Ohio district of the US Geological Survey. He has spent his entire professional career with the USGS, the last 23 years of which he has been Ohio District Chief. He was born in Ada, Ohio and received a BSCE from Ohio Northern University in 1964. He went on to get a MSCE from the University of Arizona in 1966. He is a licensed Professional Engineer and Professional Hydrologist. He is a member of the Ohio Academy, American Institute of Hydrology and Water Management Association of Ohio. He has authored or coauthored over 30 technical reports and articles. He is a member of several of several State and local advisory boards, councils and committees.

##### **RODNEY A. SHEETS, JR.**

Rodney A. Sheets, Jr. currently is the ground-water specialist and a staff hydrologist for the United States Geological Survey, Water Resources Discipline, in Columbus, Ohio and has been for about 10 years. Prior to that, Rod spent time as a staff hydrologist, hydrologic technician, geologist (USGS Office of Earthquakes and Volcanoes) and water-well driller, in eastern Ohio. His current duties include participation in local, State and Federal committees and groups concerning water data and research. He has ongoing collaboration with many Ohio communities, State of Ohio hydrologists and planners, industries and universities around Ohio. He has published results of his research in such journals as *Ground Water*, *Water Resources Research*, *Journal of Hydrology* and the *Ohio Journal of Science*. He is a member of NGWA, AGU, SEG, and OAS. He has volunteered his time for classroom instruction (from grade schools to universities) and has participated in Earth Day celebrations. He also participates in the State Tree Farm System and pursues research and recreational interests in forest and wildlife management.

##### **DOUGLAS L. SHRAKE**

Douglas L. Shrake has been a Geologist at the ODNR, Division of Geological Survey in Columbus, Ohio, since the fall of 1985. He has BS (Ohio University, 1983) and MS (Wright State University, 1989) degrees in Geology and passed the Professional Geologist (PG) license exam in 2000 (Florida PG #2147). He has been a member of the Ohio Academy of Science since 1989. He has regularly presented papers at Ohio Academy of Science and at geological meetings since 1987. He has produced over 400 geologic maps and authored or coauthored numerous papers and reports published by the Survey and in various geological publications. He routinely works with personnel from the USGS, OEPA, ODOT, Ohio Historical Society, various ODNR Divisions, and staff from several Ohio colleges to document Ohio's geology. He is an Adjunct Instructor and a member of the Board of Counselors for the Department of Geological Sciences at Wright State University. He is a native of Ohio and active in his local community working with the Girl Scouts, Boy Scouts, schools, and church.

#### **Industry-at-Large**

##### **JAMES R. BAUDER**

James R. Bauder, the senior scientist of BAUDER CERTIFIED EARTH SCIENCES, Inc., has been a member of the Ohio Academy of Science for over 40 years and a Fellow for over 12 years. He earned his B.S. in Geology and M.S. in Agronomy (Soils) from

The Ohio State University. His employment history includes; soil survey for the Ohio Department of Natural Resources (1960-1971), public soils/geology consultant for Stark County, Ohio (1971-1985), and private practice (1985-Present). Mr. Bauder is a nationally certified soil scientist and geologist, Registered Geologist in Indiana and Pennsylvania, and a Registered Sanitarian in Ohio. He is co-founder of the Association of Ohio Pedologists and a founding member of the National Society of Consulting Soil Scientists. He serves on the Board of Trustees of the Ohio Academy of Science in the capacity of At-Large Industry Representative as well as Science Fair judge on the State Level.

##### **TRACY L. ENGLE**

Tracy L. Engle was elected to the Board of Trustees in 1997 and became a life member in 1999. Mr. Engle is a Senior Wetland Scientist with URS Corporation, Inc. in Cleveland, Ohio. Currently, Mr. Engle is responsible for marketing the environmental transportation program statewide. In addition, he manages projects and conducts fieldwork to identify and delineate wetlands, inventory terrestrial flora and fauna including threatened and endangered species as well as assess impacts of proposed projects for a variety of public and private sector clients. He received a BS (Wildlife Management) from The Ohio State University in 1992 and an MS (Biological Science) from John Carroll University in 2002. Research interests include the study of wetland and waterfowl ecology and management. He is a recipient of the 1996 Paper of the Year from the Ohio Journal of Science for an article entitled *Flora of a Diked and an Undiked Southwestern Lake Erie Wetland*, and has presented the results of this research at the Ohio Fish and Wildlife Conference. Mr. Engle remains active with the Ohio Academy of Science, The Wildlife Society, Ducks Unlimited, and as the assistant chairman of his community's Zoning Commission.

##### **MILES FREE**

Miles Free is Director of Quality and Development for Republic Engineered Products, in Fairlawn, Ohio. Miles has lead the development and integration of quality systems and the use of technology to improve quality and processes throughout Republic, including laser gaging, statistical methods, and design of experiments. Miles has taught gifted and talented science enrichment classes, judged local and district science fairs, and has visited elementary classes to give science demonstrations. Miles was an early reviewer of the Draft State Science Standards. Miles has also put on teacher in-service days on the topic of Developing Competencies for Technical Work, has presented several

papers at the Academy's Annual Meetings, and is a frequent contributor to publications on a variety of technical topics. Miles received his Bachelor of Science degree from Youngstown State University in 1975. Miles received a National Academy of Sciences Teacher-Engineer Fellowship in 1994.

##### **JOHN A. LONG**

Dr. John A. Long is a partner in LongBater Consultants, a consulting firm based in Marysville, Ohio, that offers technical and marketing assistance to industry worldwide. Areas of specialization are in agronomy and horticulture. Dr. Long received his BS degree from the University of Idaho, MS degree from Washington State University, and PhD degree from Texas A & M University. He was on the faculty at New Mexico State University and Texas A & M University and then joined the O. M. Scott Company where he worked in agronomic and horticultural research programs from 1961 to 1990. Dr. Long formed LongBater Consultants after retiring from the Scott Company. He is listed on a number of Scott patents and served as president of the National Council of Commercial Plant Breeders and chairman of the Turf and Garden Committee of the Fertilizer Institute. He also was active in the American Seed Trade Association for a number of years. Dr. Long has frequently served as judge at district and state science fairs sponsored by the Ohio Academy of Science.

##### **GERALD R. MYERS**

Mr. Myers is a Vice President with the environmental consulting firm, Metcalf & Eddy in Columbus. He has 23 years of experience as an environmental management and public health consultant on projects such as the River Valley School District environmental investigations and clean up of the Coit Road industrial site in Cleveland. Mr. Myers has served on the Ohio Academy of Science, Science Policy Advisory Board for 3 years, and has been an academy member for many years. Mr. Myers and is a frequent volunteer for a number of Academy activities including representing the Academy on the Ohio Bicentennial Science and Technology Committee and sponsoring the Environmental Science and Engineering Speakers Breakfast at the Annual meeting. Mr. Myers has a BS (Conservation) and an MS (Biology) from Kent State University. Mr. Myers is a Certified Environmental Professional (CEP 131).

# THE OHIO ACADEMY OF SCIENCE

## Registration Form

112<sup>th</sup> Annual Meeting

April 4-5-6, 2003

Hosted by the University of Findlay

Advance registration must be received by March 15, 2003

**ALL MEETING ATTENDEES MUST REGISTER:** Access to sessions by name tag only. Name tag, information packet and receipt will be available at the meeting. Please return the completed registration form along with the appropriate fees to the address printed below.

**STUDENTS, SPOUSES, OR RELATIVES:** A special discount schedule has been approved to promote and encourage participation of undergraduates, pre-college students, non-science spouses or relatives. All students, non-science spouses, parents or relatives must register using a separate form. This registration does not include membership or meals, which must be paid separately on this form.

### AFTER MARCH 15

**NON-SCIENCE SPOUSE, PARENT OR RELATIVE OF FIRST AUTHOR** \$10 \$15

### \*Discount Rate for students who are not first author:

(Does not include membership)

1-4 from same institution \$20 \$25  
 5-10 from same institution \$15 \$20  
 11 or more from same institution \$10 \$15

**Please use a SEPARATE REGISTRATION FORM for each person. Copy this form as needed.**

PLEASE PRINT OR TYPE

Circle: Ms. Mrs. Mr. Dr.

Name \_\_\_\_\_

First Middle Last

Job Title \_\_\_\_\_

School, Organization, Agency, Institution, or Employer \_\_\_\_\_

Is the following a home address?  Yes  No  
 Students MUST use home, dorm or apartment address.

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_ County \_\_\_\_\_

Work Phone (\_\_\_\_\_) \_\_\_\_\_

Home Phone (\_\_\_\_\_) \_\_\_\_\_

FAX (\_\_\_\_\_) \_\_\_\_\_

Email \_\_\_\_\_

### MAIL FORM WITH PAYMENT TO:

The Ohio Academy of Science  
 PO Box 12519  
 Columbus OH 43212-0519  
 FAX 614/488-7629

## Registration Fees

Please check appropriate categories. One fee covers ALL THREE DAYS. **Payment must be received by March 15, 2003 to avoid higher rates.** On-site registration will be accepted at the higher rate by credit card or check ONLY. **First authors have pre-paid registration when submitting their abstracts and DO NOT NEED to return this form unless they need meals.** First authors are already registered for the meeting.

CURRENT MEMBER REGISTRATION RATE	AFTER MARCH 15	
<input type="checkbox"/> Professional	\$65	\$70
<input type="checkbox"/> Retired	\$40	\$45
<input type="checkbox"/> Student	\$25	\$30

NON-MEMBER PROFESSIONAL AND RETIRED REGISTRATION RATE		
Includes membership		
<input type="checkbox"/> Professional	\$140	\$145
<input type="checkbox"/> Retired with Journal	\$80	\$85
<input type="checkbox"/> Retired without Journal	\$65	\$70

NON-MEMBER PRE-COLLEGE AND COLLEGE STUDENT RATE		
Includes Academy membership		
<input type="checkbox"/> College Student with Journal	\$65	\$70
<input type="checkbox"/> Student (17 & under) w/Jour.	\$65	\$70
<input type="checkbox"/> Student (17 & under) w/o Jour.	\$50	\$55

Does Not include Academy membership		
<input type="checkbox"/> Pre-college student	\$20	\$25
<input type="checkbox"/> College student	\$20	\$25
<input type="checkbox"/> 5-10 students each	\$15	\$20
<input type="checkbox"/> 11 or more students each	\$10	\$15

\*See table at left for more information.

### NON-SCIENCE SPOUSE, PARENT OR A RELATIVE OF A FIRST AUTHOR

Spouse, parent or relative \$10 \$15  
 Please use a separate form for each.

### MEALS (by preregistration)

Friday Dinner \$20 N.A.  
 Saturday Lunch \$4.50 \*\$5  
 \*\$5.00 cash only at event

### MEMBERSHIP RENEWAL

Family \$85  
 Regular Member \$75  
 Retired Member w/OJS \$40  
 College Student \$40  
 Student (Age 17 & under) w/OJS \$40  
 Retired Member w/o OJS \$25  
 Student (Age 17 & under) w/o OJS \$25

**TOTAL ENCLOSED** \$ \_\_\_\_\_

### METHOD OF PAYMENT

NO REFUNDS AFTER March 15, 2003.  
 Return checks subject to a \$30.00 return fee.  
 Only registrations paid by Purchase Order, VISA, or MasterCard will be accepted by FAX at 614/488-7629.

- This copy confirms a FAXed registration
- Check enclosed payable to The Ohio Academy of Science
- Purchase order enclosed No. \_\_\_\_\_
- Online payment option [www.merchantamerica.com/ohiosci](http://www.merchantamerica.com/ohiosci)
- Please charge my credit card

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Signature \_\_\_\_\_