

STONE LABORATORY 2000 PROGRAM REVIEW

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STONE LABORATORY 2000 PROGRAM REVIEW



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FRANZ THEODORE STONE LABORATORY

2000 PROGRAM REVIEW

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April 2001

EXECUTIVE SUMMARY

Stone Laboratory, founded in 1895 and located on the 6.5-acre Gibraltar Island in the harbor at Put-in-Bay, Ohio, is Ohio's Lake Erie laboratory, the oldest freshwater biological field station in the country, and the north coast campus of The Ohio State University. The year 2000 was very productive at Stone Laboratory. Enrollment in the summer program in 2000 was 201 students, surpassing 200 students for the fourth year in a row and only the seventh time in the Laboratory's history—over 100 years (Figure 1). While the majority of our students come from Ohio State University, since 1990 our summer students have also come from 39 other Ohio colleges, 31 out-of-state colleges, and 260 high schools (Figures 2 and 3). Undergraduate, graduate, and high school student enrollment were all strong in 2000, providing the balance that we desire and have been able to achieve annually since 1995 (Figure 4). The number of credit hours taken surpassed 800 for the tenth consecutive year (Figure 5). Our efforts to enhance opportunities for women in science, initiated in 1989, continue to bear fruit as we now annually enroll more women than men (Figure 6). Efforts to expand the number and diversity of 1-week course offerings have been very successful, and we now have nine different 1-week courses with up to four sections per course and eight 5-week courses. An experimental offering of one of the one-week courses for students in the Minority Research Initiative was very successful in 1998 and followed a successful offering for students from the Young Scholars Program in 1997. We enrolled two Young Scholars in 1999, but the program was unable to send any in 2000 due to funding difficulties. We are very optimistic that this program will rebound with a large group in 2001.

During the spring and fall, we offer a workshop/conference/tour program for students from grade 5 through adult. This program has set new records for the number of groups and the total number of participants each year from 1997-2000 with 174 groups and 5,660 participants in 2000 (Figures 7 and 8). The majority of these students are in the influential middle school years (Figure 9).

The demand for research space at the Laboratory remains very strong. The number of scientists and students working on research projects at the Laboratory has increased steadily from 31 in 1995 to

85 in 2000. The 85 scientists and students during the summer of 2000 were from 14 different colleges and agencies working on 23 different research projects at Stone Laboratory (Figure 10).

With the assistance of the Friends of Stone Laboratory, we have been able to continue the trend of increasing the number of scholarships we are able to award, and set a new record with 57 scholarships in 2000 (Figure 11). However, the total value of the scholarships, \$14,389, was only the second highest in our history (Figure 12). While these trends are indeed pleasing, we are still providing scholarships to less than 30% of the students attending Stone Laboratory and covering only about 25% of the costs for those students. Since 1995, additions to our endowments through deferred gifts as part of the donor's estate total over \$2,500,000, but did not grow significantly in 2000.

Our most significant accomplishments in 2000 were:

- 1) With the assistance of Senator Robert Latta and the State Legislature, capital improvement funds were provided to continue the renovation of the Castle in 2000 with the reconstruction of the porches and the repair of exterior masonry;
- 2) We hosted Ohio Sea Grant's 12th State Legislature/Congressional Day on Lake Erie in July with a large portion of the event occurring at Stone Laboratory;
- 3) With support from the Office of Research, UNITS, Physical Facilities, and Housing, Food Service and Event Centers, a T1 line was installed connecting the Laboratory to the main campus and providing telephone service, internet connections, and data transmission capabilities in all buildings and all rooms on both South Bass and Gibraltar Islands;
- 4) With the assistance of the Friends of Stone Laboratory, the Ohio Division of Wildlife, and the Office of Physical Facilities, we were able to purchase and renovate a research vessel from the Division of Wildlife—the 42-foot, *Explorer*, which was renamed the *Gibraltar III* when the repairs were completed and the vessel was documented;
- 5) The Ohio Sea Grant College Program received the 2000 Lake Erie Award from the Lake Erie Commission. Stone Laboratory had received the Award in 1995;
- 6) We developed the first comprehensive strategic plan for the entire program, Ohio Sea Grant, Stone Laboratory, CLEAR (Center for Lake Erie Area Research), and GLAERC (Great Lakes Aquatic Ecosystem Research Consortium) and built it around the strategic plan for the National Sea Grant College Program and the Academic Plan for The Ohio State University; and,
- 7) The entire program went through an extensive review by a Program Assessment Team from the National Sea Grant College Program and received the highest possible rating—Excellent.

I. INTRODUCTION

Franz Theodore Stone Laboratory, Ohio's Lake Erie Laboratory, is the nation's oldest freshwater biological field station, and the Lake Erie and North Coast Campus of The Ohio State University. The Laboratory, originally called the "Lake Laboratory," was created in 1895 when The Ohio State University Board of Trustees appropriated \$350 to build a second floor on the state fish hatchery in Sandusky. In 1903 the Laboratory moved to a new building at Cedar Point, then to the second floor of the State Fish Hatchery at Put-in-Bay in 1918, and finally to its current location on the 6.5-acre

Gibraltar Island with additional holdings on South Bass Island, in 1929. At that time the name was also changed to the Franz Theodore Stone Laboratory in honor of the donor's father.

Lake Erie is biologically the most productive of the Great Lakes, and the Laboratory is ideally located near the boundary of the Lake's western and central basins--"the most favorable location in Ohio, possibly even in the Great Lakes basin," according to Julius F. Stone, a Columbus businessman and a member of the University Board of Trustees, who in 1925 donated Gibraltar Island to The Ohio State University for teaching and research. Facilities at Stone Laboratory include a research building, a library, a 21-room laboratory/classroom building, a dining hall, five dormitory units, and the historic "Castle" residence (a National Historic Landmark constructed in 1865) of Philadelphia banker and Civil War financier, Jay Cooke.

Today, the Laboratory: provides a facility for year-round research (it has been called "the base for the research that saved Lake Erie"), develops and offers custom-designed aquatic science field trips and workshops for grades 5 through adult, offers college credit through a rigorous summer program of courses, and offers special conference facilities and speakers for groups interested in Lake Erie and the region's natural resources.

This report briefly reviews the past year, beginning with a program overview, followed by a discussion of the history of the Laboratory, and concludes with a more in depth discussion including "Milestones in the History of Stone Laboratory." The figures summarize the past 12-20 years, while the tables cover only 2000, adding to similar tables in reports produced in 1999, 1998, 1997 (covering the period 1995-97), and 1995 (covering the period 1988-94.)

VISION FOR THE FUTURE

Our vision is to be universally recognized as the premier freshwater education and research facility in the country. Our education and research programs will be unsurpassed. Our education programs will be models for science education in this country. The results of our research will be used to solve Lake Erie environmental problems and enhance the value of the Lake.

MISSION

The mission of the Franz Theodore Stone Laboratory is to serve The Ohio State University, the Ohio Sea Grant College Program, the State of Ohio, and the people of Ohio as their research, education, and outreach facility on Lake Erie. We must enhance the value of, and improve the management of, our marine and coastal resources through the education, research, and outreach programs conducted at the Laboratory. The Laboratory's programs should address the needs of, and create opportunities for, the following audiences: students in grades 5-12, college undergraduate and graduate students, K-12 teachers, research scientists, decision-makers and elected officials, technical staff in state and federal agencies, and the general public. Within this mission we have several goals:

- 1) Improve the quality of science education in Ohio by creating high-quality, hands-on science education opportunities for students in grade 5 through adults;
- 2) Create opportunities for undergraduate and graduate research training;

- 3) Create special educational opportunities for high school students and teachers;
- 4) Foster more informed decision-making through education and training programs for decision-makers and elected officials; and,
- 5) Encourage and support research on critical issues and problems facing Lake Erie, the Great Lakes, and the environment, providing the science behind more informed management decisions.

PROGRAM RELATIONSHIPS AND REPORTING STRUCTURE

Dr. Jeffrey M. Reutter is Director of the Lake Erie Programs at The Ohio State University: the Ohio Sea Grant College Program, F.T Stone Laboratory, CLEAR, and GLAERC. Stone Laboratory is part of the School of Natural Resources within the College of Food, Agricultural and Environmental Sciences. The Director of Stone Laboratory reports to the Vice President for Agricultural Administration, Dr. Bobby D. Moser. CLEAR is part of The Ohio State University Office of Research and the Director reports to the Vice President for Research, Dr. C. Bradley Moore. Structurally, the Ohio Sea Grant College Program is part of CLEAR, and GLAERC is part of Sea Grant, but operationally, Sea Grant has become the umbrella organization for the other three: Stone Laboratory, CLEAR, and GLAERC. This operational strategy takes advantage of Sea Grant's broader mission—research, education, and outreach. Stone Laboratory is the shared research facility for GLAERC and the base for many of Ohio Sea Grant's research, education, and outreach programs.

II. OVERVIEW

EDUCATION

Courses for College Credit. Stone Laboratory began offering courses for college credit in 1896. Each summer The Ohio State University offers 18-26 courses at Stone Laboratory. All courses take advantage of the Laboratory's unique location and capabilities and emphasize a hands-on approach to learning with a combination of lecture, laboratory, and field experience. Enrollment is limited to 12-20 students per course. The curriculum is rigorous with students in class from 8:00 a.m. to 4:00 p.m. six days per week.

Until 1990, the Laboratory offered courses only for upper level undergraduate and graduate students. In 1990, in an effort to join the drive to improve the quality of science and math education in Ohio and in this country, a program of introductory courses for college freshmen and sophomores was developed. This program is also open to superior high school students on a competitive basis, and allows them to gain college credit while still in high school. These new programs strive to make science exciting and to challenge the best young minds this country has to offer.

Special courses are also offered for teachers with the goal of improving the quality of science education in our schools. The initial courses for teachers—Marine and Aquatic Education, Great

Lakes Education Workshop, and Global Change Education—were developed by faculty from the Ohio Sea Grant Education Program and use curriculum activities and reference materials developed with Sea Grant support as text. In addition to these instructional methods courses, science content courses for teachers introduce fundamentals of biological and earth systems topics where they can best be taught—in field settings.

Teaching at Stone Laboratory, while a great honor, is very different from teaching on the main campus and requires a great deal of expertise and energy—few courses on college campuses are taught for eight hours per day with the opportunity to blend lecture, laboratory, and field work. We search throughout the state, region, and country to get the best faculty to teach at the Laboratory. In addition to faculty from The Ohio State University, it would not be unusual in a given summer to find faculty members from institutions such as Bowling Green State University, Heidelberg College, Kent State University, Miami University, Otterbein College, Penn State University, Syracuse University, the University of Massachusetts, the University of Michigan, Wittenberg University, and the American Museum of Natural History in New York. Student evaluations consistently rank Stone Laboratory courses as being far superior to courses taken at their home institutions.

Enrollment and interest in Stone Laboratory have increased significantly in the 1990s. During the 1980s average annual enrollment was approximately 57 students. From 1991-2000, average annual enrollment jumped to over 200 students—an increase of over 350 percent (Figure 1). Furthermore, from 1990-2000, students from 40 Ohio colleges and universities, 31 out-of-state colleges and universities, and 260 high schools participated in the Laboratory's courses (Figure 3).

Aquatic Science Field Trips, Workshops, Tours, and Conferences. During the spring and fall, we continue our efforts to enhance the quality of science education by offering custom-designed field trips and workshops for students from grade 5 to adult. These workshops range in duration from 1-3 days and generally include a science cruise on the Laboratory's research vessel, the *MV Bio-Lab*. The students collect samples using fish trawls, bottom samplers, plankton nets, electronic probes, etc. and return with them to the Laboratory, where they are taught to use microscopes and analyze their samples and data. The Laboratory is also used as a conference facility for groups of up to 100. In the past 10 years participation in the workshop/conference/tour program has increased from approximately 1,850 to over 5,600 annually.

RESEARCH

Research is conducted 12 months per year at Stone Laboratory, and the Laboratory's students are involved with many of the projects. From 1995-97, 65 different research projects were conducted at Stone Laboratory by 53 investigators (the average investigator worked at the Laboratory for two of the three years), with 71 student assistants, representing 27 different universities and agencies (Figure 10). In 1998, 30 different research projects, with 29 principal investigators and 44 assistants, from 21 universities and agencies, were conducted at the Laboratory. In 1999, the number of projects dropped to 17, the number of institutions involved dropped to 13, and the number of principal investigators dropped to 21. However, the projects were larger and the number of graduate students and technicians working on the projects set a record at 55. In 2000, the number

of projects increased to 23, the number of institutions increased to 14, the number on principal investigators increased to 24, and we set another record with 61 students and technicians working at the Laboratory. In addition to coming from Ohio's colleges and universities, research scientists come from out-of-state institutions, state agencies, federal agencies, the private sector, city governments, and foreign countries.

Stone Laboratory is the shared research facility of the Great Lakes Aquatic Ecosystem Research Consortium (GLAERC), created in 1992 and composed of aquatic scientists at 12 Ohio colleges and universities: Bowling Green State University, Case Western Reserve University, Cleveland State University, Heidelberg College, John Carroll University, Kent State University, Miami University, Mount Union College, Ohio State University, Ohio University, the University of Toledo, and Wright State University. GLAERC enhances collaboration, cooperation, communication, and equipment and facility sharing to make Ohio's top scientists more competitive for federal funding and to allow them to better address the critical issues and problems affecting Lake Erie and Ohio's surface waters.

FRIENDS OF STONE LABORATORY

In 1981, a group of former Laboratory students, faculty, and individuals concerned with science education and the Lake Erie ecosystem, formed the "Friends of Stone Laboratory." The goal of the Friends is to enhance the programs at the Laboratory and allow students in the future to experience the same opportunities they had. Many former Stone Laboratory students have said the Laboratory provided the best learning experience of their academic careers. They frequently cite the value of the hands-on approach to learning and the corresponding increase in retention of the information. The words of Benjamin Franklin are frequently used to emphasize this point: "Tell me, I forget. Show me, I remember. Involve me, I understand."

The Friends raise funds for scholarships, supplies and equipment, and they volunteer time and materials to keep the facilities in good repair. They created their first endowment in 1983 and have since created five more, and the total for all six endowments surpassed \$600,000 in July 2000. These endowments, with additional contributions from organizations, clubs, industries, and individuals, support dozens of student scholarships each year.

III. STONE LABORATORY HISTORY

Note: This section is modified from an article in the October 1994 issue of *Twine Line* by Maran Hilgendorf. Research for this article was conducted by Becky Vidra and Ohio State Archivist Bertha Ihnat. Information was obtained from various deeds, reports, and newspaper articles.

It was a time far different from our own. The commercial fishery on Lake Erie was still strong but would soon collapse. Automobiles were being perfected, and only a few roads in the largest of cities were paved. Only a few elite hotels had electric lights and toilets, and the motion picture industry was brand new. The x-ray was discovered, the typewriter and wireless telegraphy were just invented, and the botulism bacterium, *Clostridium botulinum* was isolated.

It was during this time—in 1894—that Professor David S. Kellicott, Chair of the Department of Zoology and Entomology, requested of then Ohio State University President Scott "the establishment in the near future of a lake laboratory at or near Sandusky and the creation of a State collection of fishes in Ohio . . . to afford an opportunity and a stimulus to instructors and students of biology to spend their vacations investigating living problems in biology, especially such as are connected with important industries like the fisheries."

On 2 September 1895, The Ohio State University Board of Trustees approved the project and appropriated the sum of \$350 for the construction of a second floor to the Sandusky Fish Hatchery Building. Kellicott and four graduate students conducted research during the next two summers until Kellicott's death.

Professor Herbert C. Osborn became chair and Laboratory director in 1899. Courses for credit were first offered in 1900, chiefly at the request of high school teachers who wished instruction in field biology. Fourteen students attended that year.

"A more adequate location for field work with more laboratory space" was soon desired, so Osborn obtained a 50-year lease from Cedar Point Resort and for \$3,387 erected a frame building that was dedicated 2 July 1903. The number of students attending classes increased to 22 and research continued.

It soon became the policy that two members of the instructional staff were chosen from other institutions to "promote cooperation from the other colleges and universities and to attract students." This practice continued from 1902 throughout the first 50 years.

State Fish Hatchery officials at Put-in-Bay donated the second floor of their hatchery building to the Lake Laboratory in 1913 because Cedar Point had become so large and popular that it was no longer a desirable site for the Laboratory. For the next several years, most of the 20 or so students who attended each year were men who were housed and had their meals in a nearby cottage. Because of the hostilities of the First World War, attendance declined to an all-time low of two students in 1918.

From 1917 to 1937 Professor Raymond C. Osburn was Laboratory director. In 1920 he became a member of the advisory board of the Ohio Fish and Game Division. With this appointment he was able to arrange subsidies to conduct a fisheries survey in Ohio from 1920 to 1923. During this time, enrollment had grown to the point that they were "bursting at the seams."

On 6 July 1925, Julius F. Stone, a member of The Ohio State University Board of Trustees, presented Gibraltar Island to The Ohio State University as a permanent home for the "Lake Laboratory," to be devoted to the purposes and uses of teaching and research. In deeding the island to the University, Stone located the Laboratory in "the most favorable location in Ohio, possibly even in the Great Lakes basin."

In his letter to the Trustees, Stone stated that "with the enormous increase in population and with no indication of any diminution, it seems quite inevitable that human life will sooner or later press against the limit of subsistence, consequently every source of food supply must not only be conserved, but developed."

The University's Board of Trustees resolved that the Laboratory should thereafter be known as the Franz Theodore Stone Laboratory in honor of the father of Julius F. Stone. On 22 June 1929, the University formally opened the new 21-room Laboratory Building. According to Osburn, moving to Gibraltar Island would "permit more than twice as many students to attend."

In 1934, a committee appointed by Ohio State President Rightmire determined that the Laboratory should broaden its scope to include research and service in biology and human welfare. They also recommended that a full-time director and permanent staff should operate the Laboratory and that only graduate students be admitted for course work. This continued for nearly two decades, after which time the year-round program was discontinued because of such factors as logistical difficulties, limited facilities, years of economic depression, a second world war, and reduced state support and enrollment (only five students were enrolled in courses during the summer of 1955). Because of the enthusiasm and encouragement of former students, the Ohio State administration continued the summer course program under the direction of Professor Loren S. Putnam. For nearly three decades, approximately 18 courses were offered during two summer terms (5 weeks), with a capacity of 60 students.

After the retirement of Osburn, succeeding directors included Dwight M. DeLong, (1936-1938), Thomas H. Langlois (1938-1955), Loren S. Putnam (1955-1973), Charles E. Herdendorf (1973-1987), and Jeffrey M. Reutter (1988 to present).

By the late 1940s, after 50 years of operation, then retired Professor Osburn noted that students from "nearly every state in the Union" as well as students from Argentina, South Africa, and India had attended Stone Laboratory. "I hesitate to say how many doctor's and especially master's degrees have been completed on the work begun or completed at Stone Lab, and around 200 research papers have been published in connection with the work done at this laboratory."

In 1981, the Friends of Stone Laboratory was created to provide a way for former students to support the facility in its efforts to be not just the oldest, but the best, freshwater biological field station in the United States. This association raises awareness and funds for scholarships, research, and equipment.

In 1983, the University received \$1 million from the State Legislature for a sewage treatment plant, new housing for students and workshop participants; and for upgrading of the utility services, Dining Hall, and teaching laboratories. Construction of a 48-person, 12-unit housing facility was completed in 1986. During construction in 1985, Gibraltar House served as the Dining Hall. In 1989, the University received \$1 million dollars for erosion protection, new docks, a new water treatment plant on Gibraltar, and improvements in housing for faculty and research scientists. In 1997, the Laboratory received \$500,000 from the University to begin renovation of Jay Cooke's castle. In 1998, the State Legislature added \$500,000 to complete the renovation of the building exterior which was accomplished in 2000.

Beginning in 1987, some courses were offered in either a 2.5-week or 5-week format. In 1990, introductory, one-week, courses were first offered to freshmen and sophomores and to superior high school students.

IV. 2000 REVIEW

PERSONNEL

Dr. Jeffrey M. Reutter has been the Director of Stone Laboratory since 19 September 1988. Before that time he had served as Associate Director beginning in 1982, and as the Acting Director from 19 December 1984 to 31 December 1985 and from 1 November 1987 to 18 September 1988. John R. Hageman has been the Laboratory Manager at Put-in-Bay since 1 May 1987. Arleen Pineda has been the Program Coordinator in the Columbus Office since May 1996 and before that had been our Columbus office secretary dating back to March 1986. Dr. Rosanne Fortner has taught at the Laboratory since the mid-1980s and became our Associate Director on 1 June 2000. Dr. R. Christopher Stanton has been the Assistant to the Director since August 2000 and began teaching at the Laboratory in 1999. Bonita Cordi has been the Office Associate and Receptionist in Columbus since October 1999. Karen Ricker was hired as our Communications Coordinator and the Assistant Director of Ohio Sea Grant in January 1998. Kelly Dress became the Office Associate at Put-in-Bay in April 1998. Matt Thomas became the Assistant Laboratory Manager at Put-in-Bay in June 1999 and the Diving Safety Officer for the Laboratory and the University in October 1999. Table 1 lists the Laboratory's administrative staff, teaching faculty, graduate teaching associates, research staff, student assistants, and office and technical staff for 2000.

OPERATIONAL CHANGES

A thorough internal and external review of the Stone Laboratory program was completed in 1988 and culminated with the signing of a "Plan of Action" for Stone Laboratory on 5 October 1988. Among other things, this "Plan" called for: (1) efforts to increase enrollment in credit courses taught at the Laboratory, (2) the institution of "a series of experimental calendars over the next few years with the eventual goal of a more flexible, innovative course calendar by 1991," and (3) the development of a teaching budget "sufficient to hire faculty for all courses scheduled for a given year."

Historical Location within the University. The Director reported to the Dean of the College of Biological Sciences until 30 June 1990. During this period the Director did not have a teaching budget for the Laboratory, and, therefore, had to rely on the goodwill of various department chairs to agree to offer courses at Stone Laboratory and pay the faculty. During 1989 and 1990, negotiations were completed that resulted in a transfer of reporting lines to the Office of Academic Affairs beginning 1 July 1990 and the creation of a teaching budget for the Laboratory under the control of the Director. This gave the Director greater flexibility in determining the courses to be offered and in selecting faculty. However, the offering departments still must approve the course offerings, the faculty members selected, and the teaching assistants (TAs). In some cases, the home department assigns the TA and provides part of the stipend. During the summer of 1990, half of the teaching budget came from the departments offering courses and half came from the Office of Academic Affairs. This budget was supported entirely by the Office of Academic Affairs from 1991 through 30 June 1994. The impact of these changes is readily apparent in Figure 1.

In an effort to reduce the number of units reporting to the Office of Academic Affairs, and as a result of university-wide restructuring, Stone Laboratory was moved to the College of Food, Agricultural and Environmental Sciences beginning 1 July 1994. In this college the Laboratory is part of the School of Natural Resources and continues to have its own teaching budget, which is passed each year from the Office of Academic Affairs to the College of Food, Agricultural and Environmental Sciences.

Relationship to Ohio Sea Grant College Program. Dr. Jeffrey M. Reutter is the director of both the Ohio Sea Grant College Program and Stone Laboratory. This arrangement guarantees maximum cooperation and collaboration between the programs, guarantees that the State of Ohio will receive the maximum benefit from the programs, and eliminates any opportunity for duplication of effort.

The Ohio Sea Grant College Program at The Ohio State University is one of 30 Sea Grant programs in the National Sea Grant College Program, NOAA, U.S. Dept. of Commerce. Patterned after the Land Grant system, a Sea Grant program must be a partnership between academia, government, and the private sector. Ohio Sea Grant strives to improve education, the economy, and the environment using a combination of research, education, and outreach. Our primary goal is to enhance utilization, development, and wise management of Lake Erie, Ohio's most valuable natural resource, to enhance the quality of life for the people of Ohio. Ohio Sea Grant solicits research proposals from every college and university in the state and has supported projects at 12 Ohio universities. The program also supports an education program to enhance the skills of Ohio teachers, an extension program with 6 extension agents located along the shores of Lake Erie, and a communications staff intent on making science understandable to non-scientists. Every federal dollar must be matched by at least \$.50 from non-federal sources.

Within Ohio Sea Grant, Stone Laboratory is the facility used by many Sea Grant researchers and a major component in the Ohio Sea Grant Education Program. The Stone Laboratory Manager, John Hageman, has a 25% Ohio State University Extension appointment as a Sea Grant Agent for his support of outreach programs and the workshop/conference/tour program at the Laboratory. Through the Sea Grant Education Program, Sea Grant has supported development of new courses at Stone Laboratory. Sea Grant also assists in the dissemination of Stone Laboratory education and research materials, and in 1998 the Friends of Stone Laboratory newsletter was successfully incorporated into the Sea Grant newsletter, *Twine Line*, thus increasing the readership of both. It should also be noted that *Twine Line* was selected as the best newsletter in the country at Sea Grant Week in Oregon in 1999. Furthermore, in March 2001, the Stone Laboratory Brochure (including the poster and flier) was selected as the best brochure in the country.

CURRICULUM

Stone Laboratory offered 11-14 courses yearly from 1988-1994. During the summers of 1988 and 1989, the Laboratory offered a relatively traditional group of 13 courses each year. With one exception, these were all graduate and upper-level undergraduate courses. In 1988 there were two offerings specifically for teachers, but only one offering for teachers in 1989. We experimented considerably with the curriculum from 1988-1991 offering 17 upper-level, 5-hour courses. However, the curriculum was much more stable between 1992 and 1997 with a core of the same

eight 5-hour courses offered each year. In 1998, we again offered eight upper level term courses, five introductory one-week courses, and four one-week courses for teachers. The one difference from previous years was that Field Entomology was replaced due to low enrollment by a new course—Experimental Aquatic Ecology and Research. The 1999 curriculum was the same as 1998 with one exception, we offered a new one-week course for teachers—Ornithology for Teachers. Currently about half of the faculty members come from Ohio State University and half come from other institutions. New courses offered in 2000 included Biological Oceanography for Educators (a one-week course, EEOB 694), National Curricula for Water Education (a two credit hour course taught on three Sundays), and Marine and Aquatic Education: Tropical Studies (a 10-day course at a marine lab in Jamaica offered jointly with SUNY, Buffalo).

Introductory Courses. In the late 1980s, several international reviews and evaluations ranked the quality of science and math education in this country, and the capabilities of our students in these subjects, very low—as low as 13th or 14th among the countries of the world. One of the problems is that science frequently is not taught in an exciting fashion or by qualified individuals within many of our schools. Stone Laboratory accepted this problem as a challenge. We felt it was up to us to do our part to improve this situation, for clearly science could be taught in an exciting fashion to all age groups at the Laboratory. However, in order to have a program that addressed science education at all levels, we had two gaps to fill—we needed to create courses for lower level undergraduates (freshmen and sophomores) and more opportunities for teachers.

Until 1990, Stone Laboratory had offered courses only for upper level undergraduate and graduate students. It seemed unfair that the Laboratory was not available to freshmen and sophomores as they were striving to determine majors and identify careers. It was also very common to receive calls from the parents of high school students inquiring about opportunities for their sons and daughters at the Laboratory. Unfortunately, with the exception of our spring and fall workshop/field trip program, there were no opportunities for these students at the Laboratory. This seemed to be a logical gap to fill if we were to achieve our goal of enhancing science education at all levels. Furthermore, if successful, courses for this audience could serve as a feeder system to our upper level courses, thereby increasing enrollment at that level also, and providing increased flexibility in the academic calendar as we worked for full enrollment.

With this in mind, Dr. Reutter developed a 3-hour, 1-week Introductory Aquatic Biology course (Zoology 125) in 1990. While preference was given to students already in college, the course was also advertised through the Concurrent Enrollment Program at Ohio State so that superior high school students could enroll and receive college credit while still in high school. Enrollment was so great that the course was offered twice and enough students were turned away to offer it two more times. In 1991 four offerings of the course were planned, but again demand necessitated that it be offered five times, and again many students were turned away. The course was also offered four or five times each summer from 1992-98. One of the five offerings in 1997 was limited to students from the Young Scholars Program at Ohio State, and one of the five offerings in 1998 was reserved for students in the Minority Research Initiative.

In 1991, Dr. Reutter encouraged Dr. David Horn in the Entomology Department to develop Introductory Insect Biology (Entomology 126). In 1992, Dr. Reutter contacted Dr. Larry Krissek in the Geology Department who developed an Introductory Oceanography course (Geology 107). This

course has been so successful that it was offered twice each summer in 1993 and 1994 and once each year from 1995-99. Also, in 1992, Dr. Reutter worked with John Condit in the Zoology Department to change our 5-hour, upper level ornithology course (Zoology 624) to a 3-hour Introductory Ornithology course (Zoology 126). Consequently, from 1992-94, four introductory level courses were offered each summer, and in 1993 and 1994, due to multiple offerings of two of the courses, Stone Laboratory had a total of nine one-week introductory offerings. In 1996, Dr. Reutter worked with Dr. Robert Klips from the OSU Marion campus to develop an introductory course in Local Flora (Plant Biology 294). Consequently, in 1998, 1999, and 2000, five one-week introductory courses were offered, and, due to multiple offerings of Introductory Aquatic Biology, the Laboratory again had a total of nine one-week introductory offerings.

Courses for Teachers. While it is very common for teachers to participate in all courses at Stone Laboratory, we have been working to develop more courses specifically for teachers. Due to the multiplier effect, enhanced teacher training could have a greater impact on the quality of science education in this country than our new introductory courses.

Based on the success of his Introductory Oceanography course (Geology 107), in 1993 Dr. Krissek, developed a 3-hour, 1-week Oceanography course for teachers (Geology 584). As a result, we had three 1-week offerings specifically for teachers each year from 1993-95. Combining the teacher's courses with our introductory offerings resulted in 12, 1-week offerings in both 1993 and 1994.

In 1996, Dr. Krissek, with the assistance of Dr. William Ausich in Geology, offered a new course for teachers, "The Geological Setting of Lake Erie" (Geology 583). This one-week course was developed with assistance from the Lake Erie Protection Fund and the Ohio Sea Grant College Program and represented a new experiment for the Laboratory. The course, which has been very successful, begins at the Fawcett Center for Tomorrow on main campus on Saturday afternoon. The students go by van to Stone Laboratory, spend one night and visit Kelleys Island on Sunday, and then go to the mainland. Each day they work their way east along the Lake Erie shoreline visiting geological features and staying in motels. The trip culminates at Niagara Falls prior to driving back to Fawcett Center.

Also in 1996, Dr. Reutter worked with Dr. Carmen Trisler, Wittenberg University, and the Entomology Department to develop a new one-week course for teachers—"Insect Biology for Teachers" (Entomology 520). This course has been very popular and well reviewed by students and has been offered annually since 1996.

In late 1998 and early 1999, Dr. Reutter worked with John Condit from the Department of Evolution, Ecology and Organismal Biology to develop a new ornithology course for teachers. "Ornithology for Teachers" (EEOB 694) was offered successfully for the first time in 1999 and again in 2000.

In late 1998 and early 1999, Dr. Reutter worked with US EPA's Great Lakes National Program Office to develop a one-week course for teachers taught entirely aboard the US EPA, 180-ft., research vessel, the *Lake Guardian*. The course was taught by Drs. Rosanne Fortner and David Culver and two scientists from US EPA. It was a huge success and will be repeated whenever we can get participation from EPA.

PROMOTION AND OUTREACH

Enhancing and refining our promotion and outreach efforts has been a key to our success. Initially, to both reduce costs and increase awareness, we replaced the distribution of our large and expensive brochure with a less expensive flier and poster, that could be distributed much more broadly. Arleen Pineda and Nancy Cruickshank with Ohio Sea Grant maintain our mailing lists (over 21,000 fliers are distributed annually) with assistance from the Ohio Academy of Science, the Ohio Board of Education, Ohio Biological Survey, the Science Education Council of Ohio, and others. In the early 1990's, other promotional activities were developed including: an annual open house at Ohio State, special lectures by Dr. Reutter to pre-med majors and university college students in addition to special teachers' organizations, a GLAERC Colloquium at the Laboratory each summer, booths at the Ohio Academy of Science and State Science Day, and numerous other activities. In 1995, Dr. Reutter replaced the single, large open house on main campus with 4-6 mini-open houses conducted at different locations and at different times during the winter and spring. He also initiated guest lectures about the Laboratory in a number of Zoology, Biology, and Natural Resources courses during the winter and spring, in addition to special presentations for UVC advisors.

In 1996, with the assistance of the Friends of Stone Laboratory, we began offering scholarships at the Ohio Academy of Science's State Science Day. In 1996, we reviewed the projects of 33 students and awarded three scholarships covering room and board for a 1-week introductory level course at the Laboratory. The winners have three years to use the award. In 1997, we increased the number of scholarships to six. We awarded seven in 1998 and six in 1999 and 2000. This has been a great opportunity to reward and recruit outstanding students and we have found that the majority of the students do indeed attend the Laboratory and use the scholarship.

GUEST LECTURES

In 2000, Stone Laboratory continued its traditional schedule of Thursday evening guest lectures (Table 3). With support from the Friends of Stone Laboratory and the Office of Residence and Dining Halls, these lecturers are encouraged to spend additional time at the Laboratory and participate in some of the classes.

WORKSHOP PROGRAM

Stone Laboratory's custom designed Aquatic Science spring and fall workshop and field trip program for grades 5 through adult continues to flourish as do our efforts with educational tours and conferences. In 2000 we set records for the number of groups (174) and the number of participants (5,660), and in the six years from 1995-2000, we hosted 816 groups with a total of 27,707 participants, or an average of 136 groups and 4,618 participants per year (Table 4 and Figures 7-9).

SCHOLARSHIPS

In 2000, 57 Stone Laboratory students (new record) received scholarships valued at \$14,389 (Table 4). Twenty-seven of the scholarship recipients were high school students and 30 were college students. In the last five years, 1996-2000, 225 students received a total of \$63,357 in scholarship support to attend Stone Laboratory (Figures 11 and 12). These numbers have been gradually increasing each year. During the previous five years, 1991-95, we awarded 156 scholarships totaling \$43,146.

ENROLLMENT

During the 1980s enrollment at Stone Laboratory averaged 55-60 students per year. This jumped to 114 in 1990, 169 in 1991, 209 in 1992, 234 in 1993, and 221 in 1994, 181 in 1995, 195 in 1996, 209 in 1997, 214 in 1998, 222 in 1999, and 201 in 2000 (Figure 1 and Table 6). The 201 students that attended during the summer of 2000 came from 19 colleges and universities and 60 high schools (Figure 3).

V. FINAL SUMMARY AND PLANS FOR THE NEAR FUTURE

The development of our program of introductory courses and our new courses for educators, coupled with enhanced promotional efforts and a more targeted curriculum, has allowed enrollment at Stone Laboratory to almost quadruple since the 1980s (Figure 1). However, this growth has not come simply from an influx of high school students, as we have seen increases in the number of students of all types including students from Ohio colleges and universities, out-of-state colleges, and Ohio State University (Figures 2 and 3).

As mentioned many times in this report, the academic program at Stone Laboratory focuses on science education for all ages – grade 5 through adult. Furthermore, while the enrollment of high school students and undergraduates has experienced great increases, graduate student enrollment in the 1990s is also much greater than in the 1980s (Figure 4).

Equally important is the increase in the number of female students at the Laboratory. In 1988 we initiated special efforts to attract women to the sciences and to Stone Laboratory. In 1986, the ratio of men to women was 3:1. As this country works to increase the number of women in science, it is important to note that in every year since 1989, the number of women attending courses at the Laboratory has exceeded the number of men (Figure 6).

It is apparent that as the cost of a college education increases, fewer and fewer students are able to spend an entire summer at Stone Laboratory, and more students are enrolling for one course or one 5-week term. Nevertheless, the total number of credit hours taken at the Laboratory has still more than doubled since the 1980s (Figure 5).

PLANS FOR THE FUTURE

Renovation of Jay Cooke's Castle began in 1998 with the replacement of the roof, dome and windows. In 1999, the State Legislature, with leadership from Senator Robert Latta, appropriated \$500,000 to continue the renovation. Renovation of porches and stone work was completed in 2000. In 1999 we initiated a contract with an architectural firm to develop the plan for the renovation and reuse of the interior of the structure. This plan calls for the construction of 13-14 private rooms with bathrooms, a kitchen and dining room, a conference room capable of seating 30, several small meeting rooms, and air-conditioning throughout. Our ultimate goal is to use the Castle as an education and outreach/conference center for Stone Laboratory. We believe the Castle will attract influential groups that can help the Laboratory and the University with fund raising and enhance our ability to influence resource management decisions in the Great Lakes region.

In 1997 we replaced all of our computers with 23 donated 386 machines from the OSU Research Foundation. In 1998, ten of these machines were replaced with 486 machines, again from the Research Foundation. In 1999 we added four Pentium machines, and in 2000, with support from the OSU Office of Research, we added 14 new computers.

The *Gibraltar II* was decommissioned in 1997. Prior to the 1999 season, the Office of Physical Facilities replaced the engine and cabin on the *BioLab*. At the end of 1999 we took possession of the 1981, 42-foot *Explorer* from the Ohio Division of Wildlife to replace the *Gibraltar II*. The vessel cost \$45,000 and the Friends of Stone Laboratory contributed an additional \$15,000 to split the cost of an engine rebuild with the Office of Physical Facilities. This vessel has more than twice the work area of the *BioLab* and is about twice as fast. It should greatly increase the capabilities of the program.

Enhancing communication capabilities at the Laboratory has been a very high priority. In 1999, with assistance from UNITS, Housing and Food Service, Physical Facilities, and the Office of Research, a T1 line was installed at the Laboratory. A telephone and Internet connection was placed in each classroom, dormitory room, cottage, our main office, and the Research Building. This should allow us to do distance learning/teaching from Stone Laboratory to classrooms throughout the state, and to transmit research data anywhere in the world. This system was fully operational when classes began in 2000.

In recent years maintaining high enrollments during second term has been difficult due to the late end date—many teachers and college students from schools on the semester system have to return to school before our second term is completed. In 1997 we experimented successfully by reducing second term from 5 to 4.5 weeks. In 1998, we reduced both first and second terms to 4.5 weeks, which allowed us to conclude the entire summer program a week earlier. This was repeated in 1999 and 2000.

On 22 July 2000, Ohio Sea Grant and Stone Laboratory hosted their 12th State Legislature/Congressional Day on Lake Erie with over 160 participants. In 2001 we will host our first Leadership Institute for Newly Elected Officials.

In September 2000 Stone Laboratory and Ohio Sea Grant hosted meetings of the Board of Directors of the Great Lakes Protection Fund and the Council of Great Lakes Research Managers of the International Joint Commission. We will continue to host groups of leaders and Great Lakes decision-makers and hope this program will grow when Cooke Castle is completed.

A major weakness of the Laboratory continues to be our dilapidated research building. We will continue to develop proposals to renovate this building and construct new docks for larger vessels in front of the building. We also expect to move our administrative offices into newly renovated space in the Research Center on main campus in May 2001.

In 2001, we will continue our efforts to develop a Masters Degree Program for teachers at Stone Laboratory and a large Lake Erie monitoring program centered at Stone Laboratory.

VI. MILESTONES IN THE HISTORY OF STONE LABORATORY

- 1895 Professor David S. Kellicott, Chairman of the Department of Zoology and Entomology, presents a proposal to the University to establish a field station for the study of biology at Lake Erie. The University approves the project, appropriating \$350 for the construction of a second floor on the State Fish Hatchery in Sandusky.
- 1896 Professor David S. Kellicott is named the first director of the Lake Laboratory and operates the Laboratory for special studies during the summer.
- 1899 Professor Herbert C. Osborn is named the second director upon the death of Professor Kellicott.
- 1900 The first courses are offered at the Lake Laboratory.
- 1903 The University obtains a 50-year lease for property on Sandusky Bay at Cedar Point, erects a frame building at a cost of \$3,376, and moves the Lake Laboratory to this new site.
- 1918 The Lake Laboratory moves to the upper story of the State Fish Hatchery at Put-in-Bay on South Bass Island; an adjacent lot is purchased by the University.
- 1925 Mr. Julius F. Stone, Chairman of the Board of Trustees, acquires Gibraltar Island in Put-in-Bay Harbor from the Jay Cooke family and presents it to the University. In accepting the gift, the University changes the name to Franz Theodore Stone Laboratory in honor of Mr. Stone's father.
- 1926 The Laboratory is moved to Gibraltar Island and utilizes the two buildings on the island, Cooke Castle (1865) and Barney Cottage (1907). A construction program, which includes a new laboratory building, dining hall and two housing units, Stone Cottage and Gibraltar House, is initiated in 1926 and completed in 1930.

- 1928 "Periodic oscillations in Lake Erie," by Dr. F.H. Kreckler, contribution number 1 of a new series of papers, is published by Stone Laboratory. Contributions 2 through 13 are published from 1929 to 1974.
- 1929 The Franz Theodore Stone Laboratory on Gibraltar Island is formally dedicated.
- 1934 President George W. Rightmire appoints an Advisory Committee to study the Laboratory and plan for future development. The committee recommends expansion of the Laboratory's activities into multi-disciplinary studies, year-round operation, and appointment of a full-time director.
- 1936 Professor Dwight M. DeLong is named the fourth director, the first to be appointed to a full-time position. Professor Thomas H. Langlois serves as assistant director from 1936 to 1938.
- 1938 Professor Thomas H. Langlois is named the fifth director upon the resignation of Professor DeLong.

The Franz Theodore Stone Laboratory is established as a regular department of the University, assigned to the President's Division. Full-time faculty positions for a fisheries biologist and a limnologist are approved; Drs. Charles F. Walker and David C. Chandler are appointed.

Peach Point Cottage is purchased by Mr. Julius F. Stone and donated to the Laboratory for use as faculty housing.

- 1939 Professor Milton B. Trautman joins the staff of the Laboratory.
- 1940 The Federal Fish Hatchery on Peach Point, South Bass Island, is transferred to the University. This facility includes the main hatchery building (converted to the principal research building of the Laboratory), superintendent's residence (converted to the Laboratory Office and Library) and a shop building.

Mr. Julius F. Stone donates a two-acre woodlot on Peach Point to the Laboratory.

- 1947 The Laboratory purchases a 37-foot steel research boat, the *Bio-Lab*.
- 1951 The Laboratory name is changed to the Franz Theodore Stone Institute of Hydrobiology.
- 1953 The Laboratory purchases a 30-foot passenger boat, the *Gibraltar II*.
- 1955 The Laboratory is renamed Franz Theodore Stone Laboratory, and becomes a program of the Natural Resources Institute, College of Agriculture and Home Economics. The year-round research program is suspended.

Professor Loren S. Putnam is named the sixth director upon the resignation of Professor Langlois.

1964 The bequest of Professor Mary D. Rogick permits the purchase of two faculty housing units, Sycamore Cottage and Rogick Cottage near Peach Point.

1966 The administration of Stone Laboratory is transferred to the new College of Biological Sciences.

The Jay Cooke Home (Cooke Castle) is designated a Registered National Historic Landmark by the U.S. Department of the Interior, National Park Service.

1967 The Hydrospheric Sciences Committee recommend establishment of a research center at Lake Erie.

1970 The Coast Guard Lighthouse on the south point of South Bass Island is transferred to the University and converted to a radiobiology laboratory and faculty housing unit.

1971 The Center for Lake Erie Area Research is established with facilities at Stone Laboratory.

1973 The summer instructional program is suspended and no regular courses are offered. Students attend in independent and group study courses.

The President's Task Force on Stone Laboratory recommends continuation of research and instruction at the Lake Erie field station.

Professor Charles E. Herdendorf is named the seventh director upon the retirement of Professor Putnam.

A lease agreement is negotiated with the U.S. Environmental Protection Agency for the 63-foot research vessel *Hydra* to be docked at Stone Laboratory.

1974 The summer instructional program and year-round research staff are reinstated at Stone Laboratory.

1977 A Sea Grant education project is funded with Dr. Victor Mayer as the principal investigator and Dr. Rosanne Fortner comes to Ohio State to work on the project.

1978 The Ohio Sea Grant Program is established with one research project to market underutilized fish species, one education project working partially at the Laboratory, and one extension agent, Fred Snyder, housed within the offices of the Ohio Division of Wildlife in Sandusky.

1980 The 50th Anniversary of Stone Laboratory on Gibraltar Island is celebrated.

1981 The first meeting of the Friends of Stone Laboratory, a group of alumni and friends of the Laboratory concerned with contributing to and preserving its high academic quality, takes place.

1982 The Ohio State University Board of Trustees holds a summer meeting at Stone Laboratory.

Ohio Sea Grant sponsors the first Congressional Day on Lake Erie.

The Ohio General Assembly provides \$950,000 for capital improvements at Stone Laboratory.

Dr. Jeffrey M. Reutter is named Associate Director.

1983 A Scholarship Endowment is established by the Friends of Stone Laboratory.

Ohio Sea Grant sponsors the second Congressional Day on Lake Erie.

1984 Sustaining and Visiting Professorship Endowments are established by the Friends of Stone Laboratory.

The Lake Erie Laboratory Visitors Center is created, with initial displays built by OSU Environmental Interpretation students led by Drs. Gary Mullins and Rosanne Fortner.

Ohio Sea Grant expands Congressional Day to include the State Legislature as Ohio Sea Grants State Legislature/Congressional Day on Lake Erie.

The first course for teachers (NR/EDST 614, Marine and Aquatic Education) is offered by Drs. Rosanne Fortner and Victor Mayer.

1985 Construction is initiated for the new Residence Hall, wastewater treatment plant, and renovations to the existing Stone Laboratory building and Dining Hall.

Dr. Jeffrey M. Reutter is named Acting Director from December 84 - December 85.

Research Vessel *Hydra* returns to operation after two years, with line item support from the Ohio Legislature.

Students from Miami University, Oxford, Ohio are allowed to register for Stone Lab courses by enrolling at Miami, serving as a prototype for all state universities.

1986 New residence hall, Harborview, open for student occupancy.

Governor Richard Celeste, at the request of Ohio Sea Grant, declares 1986 "The Year of the Lake" for Lake Erie.

1987 John R. Hageman is named Laboratory Manager.

Two-and-a-half week courses are offered for the first time.

Dr. Charles E. Herdendorf retires as Director.

Ohio Sea Grant conducts its fifth State Legislature/Congressional Day on Lake Erie ending with a picnic dinner at Stone Laboratory.

Dr. Jeffrey M. Reutter is named Acting Director.

1988 Dr. Jeffrey M. Reutter is named the Laboratory's eighth Director.

The program begins utilizing the week before the beginning of first term for a one-week early offering for teachers, thereby expanding the original 10-week summer program to eleven weeks.

The Ohio State University is designated a "Sea Grant College" by the U.S. Secretary of Commerce.

Dr. David Garton's class from Ohio State University records the first official record of a zebra mussel in Lake Erie on 15 October while on a field trip at Stone Laboratory.

Ohio Sea Grant funds Dr. Garton on the first research project on zebra mussels on 15 November.

1989 Ohio Sea Grant conducts its sixth State Legislature/Congressional Day on Lake Erie ending with a picnic dinner at Stone Laboratory.

1990 Stone Laboratory is transferred from the College of Biological Sciences to the Office of Academic Affairs.

The first introductory level course (Introductory Aquatic Biology, Zoology 125) is offered at Stone Laboratory. Superior high school students can enroll and receive college credit while still in high school. Demand is so great that the course is offered twice and many students are turned away.

Enrollment reaches 119, surpassing 100 for the first time.

Half of the Laboratory's budget is provided by the Office of Academic Affairs thereby providing increased flexibility for the Director in developing an innovative new curriculum. The other half is still provided by the departments offering courses.

1991 Ohio Sea Grant conducts its seventh State Legislature/Congressional Day on Lake Erie ending with a picnic dinner at Stone Laboratory.

Stone Laboratory's entire budget comes from the Office of Academic Affairs.

A second introductory course, Introductory Insect Biology (Entomology 126), is offered for the first time and demand for Introductory Aquatic Biology is so great that the course is offered five times.

Enrollment reaches 169, surpassing 150 for the first time.

Dr. Michael Ross, University of Massachusetts, is named the “Outstanding Visiting Professor.”

1992 New introductory courses in ornithology (Zoology 126) and oceanography (Geology 107) are offered for the first time. Introductory Aquatic Biology is offered five times.

Enrollment reaches 209, surpassing 200 for the first time.

Dr. Ken Krieger, Heidelberg College, is named the “Outstanding Visiting Professor.”

The Great Lakes Aquatic Ecosystem Research Consortium (GLAERC) composed of top aquatic scientists from Bowling Green State University, Case Western Reserve University, Heidelberg College, John Carroll University, Kent State University, Miami University, Mount Union College, Ohio State University, and the University of Toledo, is formed with Dr. Reutter as Director and Stone Laboratory as the shared research facility. In subsequent years Cleveland State University, Ohio University, and Wright State University joined the consortium.

1993 Enrollment reaches 234.

Ohio Sea Grant conducts its eighth State Legislature/Congressional Day on Lake Erie ending with a picnic dinner at Stone Laboratory.

Dr. David Moore, Utica College of Syracuse University is named the “Outstanding Visiting Professor.”

Erosion protection work is completed as is the new reverse osmosis water treatment system for the Laboratory’s water supply.

1994 Franz and Kate Stone visit the Laboratory with their grandson Franz T. Stone IV.

Dr. C. Lavett Smith, American Museum of Natural History, New York, is named the “Outstanding Visiting Professor.”

Reporting lines for the Laboratory change from the Office of Academic Affairs to the School of Natural Resources within the College of Food, Agricultural and Environmental Sciences.

1995 Ohio Sea Grant conducts its ninth State Legislature/Congressional Day on Lake Erie ending with a picnic dinner at Stone Laboratory which also serves as the official start of the Laboratory's Centennial Celebration.

The Friends of Stone Laboratory, with assistance from the College of Food, Agricultural and Environmental Sciences, place a new flagpole on the island.

The Stone Laboratory Hall of Fame is created and Franz and Kate Stone are the first to be inducted.

The Oakland Park Conservation Club is inducted into the Hall of Fame.

Former Directors Loren "Puttie" Putnam and Charles E. Herdendorf, and former Associate Directors John L. Crites and Ronald L. Stuckey are given distinguished service awards.

The Geologic Setting of Lake Erie (Geology 583), a one-week course for teachers, is offered for the first time.

The workshop program sets records with over 80 groups and over 3,000 participants.

Bobby D. Moser, Vice President and Dean of the College of Food, Agricultural and Environmental Sciences receives the first Superior Leadership Award.

Dr. Carmen Trisler, Wittenberg University, receives the "Outstanding Visiting Professor Award."

Stone Laboratory receives the first "Lake Erie Award" from the Ohio Lake Erie Commission in recognition of the Laboratory's many contributions to education, research and the improvement of the Lake Erie ecosystem.

1996 Waldock Gazebo and Lakeview Pavilion are built on Gibraltar Island using donations from Jack Waldock, longtime supporter of Ohio Sea Grant and Chair of the Northwest Ohio Sea Grant Advisory Committee.

The Centennial Celebration concludes with a program and gala during which time Jack Waldock and Bobby Moser place capsules into the base of Waldock Gazebo.

We receive resolutions and proclamations honoring the Laboratory from the Governor, Congress, the Ohio House of Representatives, the Ohio Senate, and the Ohio Board of Regents.

The workshop program sets new records for number of groups (100) and participants.

Former Directors Loren "Puttie" Putnam and Charles E. Herdendorf are inducted into the Hall of Fame.

Former Associate Director Walter E. Carey, and retiring Maintenance Supervisor, Timothy P. Luecke, receive Distinguished Service Awards.

Dr. Carmen Trisler, Wittenberg University, receives the “Outstanding Visiting Professor Award” for the second time.

1997 Ohio Sea Grant celebrates its 20th anniversary with its 10th State Legislature/Congressional Day on Lake Erie. It is also the 15-year anniversary of Ohio Sea Grant’s first Congressional Day on Lake Erie in 1982.

New exterior lighting is placed on Gibraltar Island and new blackboards are placed in all of the classrooms.

The Gibraltar II is permanently taken out of service due to hull problems caused by age.

Introduction to Local Flora (Plant Biology 294) is offered for the first time.

The Ohio State University Young Scholars Program sends up an entire class of students for an offering of Introductory Aquatic Biology.

The workshop program sets records for the number of groups and participants for the third year in a row.

The Laboratory sets a record for the number of graduate students—71.

A remotely operated vehicle (ROV) is purchased for the Laboratory by the Office of Research and Ohio Sea Grant.

Dr. David W. Garton is hired as the Associate Director.

1998 Construction is initiated and completed to replace the roof, remove the dome, and repair the windows on Jay Cooke’s Castle.

The Ohio State University Minority Research Initiative sends a class for Introductory Aquatic Biology.

The Library is moved from the main office in Bayview on South Bass Island to the third floor of Stone Laboratory on Gibraltar Island, by volunteers from the Friends of Stone Laboratory.

The Laboratory and the Friends of Stone Laboratory sets records for the number of scholarships awarded (43) and the total value of the scholarships (\$13,632).

Melissa Haltuch is hired as the 1st ROV operator.

The workshop, tour, and conference program sets records for the number of groups (151)

and the number of participants (5,246) surpassing the previous records by 40 groups and over 1200 participants.

The FOSL kick-off the State's Coastweeks Program with tours and programs on Gibraltar Island and the Put-in-Bay Lighthouse. Approximately 1000 people participate.

The Cooke family holds their first reunion on Gibraltar Island with approximately 100 guests. Jim and Ann Harding are the organizers.

Former professor and Associate Director, John L. Crites, donates prints and water colors of Laboratory buildings which are numbered and used as a fund raiser to support research opportunities for students.

Dr. Ann M. Stoeckmann, Pennsylvania State University, is selected as the Outstanding Visiting Professor.

1999 The Laboratory and the Friends of Stone Laboratory sets records for the number of scholarships awarded (49) and the total value of the scholarships (\$14,860).

Matt Thomas is hired as the first Assistant Laboratory Manager and the University's Diving Safety Officer.

Dr. Rosanne W. Fortner is hired as the Associate Director.

On 2 July, the University Board of Trustees meets at the Laboratory for the first time in 17 years.

On 9 July, Ohio Sea Grant and Stone Laboratory host the 11th State Legislature/Congressional Day on Lake Erie.

Stone Laboratory gets a T1 line for telephone and Internet communication. Telephones and Internet connections in all rooms allow 5-digit dialing to main campus and research data transmission worldwide.

New carpeting and air conditioning/heat installed in Lecture Hall.

Ornithology for Teachers is offered for the first time.

Collaboration between Stone Laboratory, Ohio Sea Grant, US EPA, and the EPA Great Lakes National Program Office bring about the offering of a new 1-week course for teachers aboard EPA's 180-ft research vessel, the *Lake Guardian*.

The total value of the 6 endowments of the Friends of Stone Laboratory surpasses \$500,000.

Enrollment in summer courses reaches 222—the second highest total in history. A total of 125 OSU students enroll—the highest number in history.

During the 1990's, students from 40 Ohio colleges, 31 out-of-state colleges, and 260 high schools take courses at Stone Laboratory.

The workshop, tour, and conference program sets records for the number of groups (173) and the number of participants (5,566).

Dr. David L. Moore, Utica College of Syracuse University, is selected as the "Outstanding Visiting Professor."

2000 The Laboratory and the Friends of Stone Laboratory sets records for the number of scholarships awarded—57.

On 22 July, Ohio Sea Grant and Stone Laboratory host the 12th State Legislature/Congressional Day on Lake Erie.

The workshop, tour, and conference program sets records for the number of groups (174) and the number of participants (5,660).

Dr. R. Chris Stanton is hired as the Assistant to the Director, a newly-created post-doctoral position.

Exterior renovation of Cooke Castle is completed.

With the assistance of the Friends of Stone Laboratory, the Ohio Division of Wildlife, and the Office of Physical Facilities, we purchase and renovate a research vessel from the Division of Wildlife—the 42-foot, *Explorer*, which is renamed the *Gibraltar III* when the repairs are completed and the vessel is documented.

The Ohio Sea Grant College Program received the 2000 Lake Erie Award from the Lake Erie Commission.

The first comprehensive strategic plan for the entire program, Ohio Sea Grant, Stone Laboratory, CLEAR (Center for Lake Erie Area Research), and GLAERC (Great Lakes Aquatic Ecosystem Research Consortium) is completed and built around the strategic plan for the National Sea Grant College Program and the Academic Plan for The Ohio State University.

The entire program goes through an extensive review by a Program Assessment Team from the National Sea Grant College Program and receives the highest possible rating—Excellent.

A monitoring instrument is deployed off the north side of Gibraltar Island, beginning the Lake Erie Monitoring Network (LEMNet).

Dr. Michael Hoggarth, Otterbein College, is named "Outstanding Visiting Professor."

STONE LABORATORY 2000 PROGRAM REVIEW



FIGURES

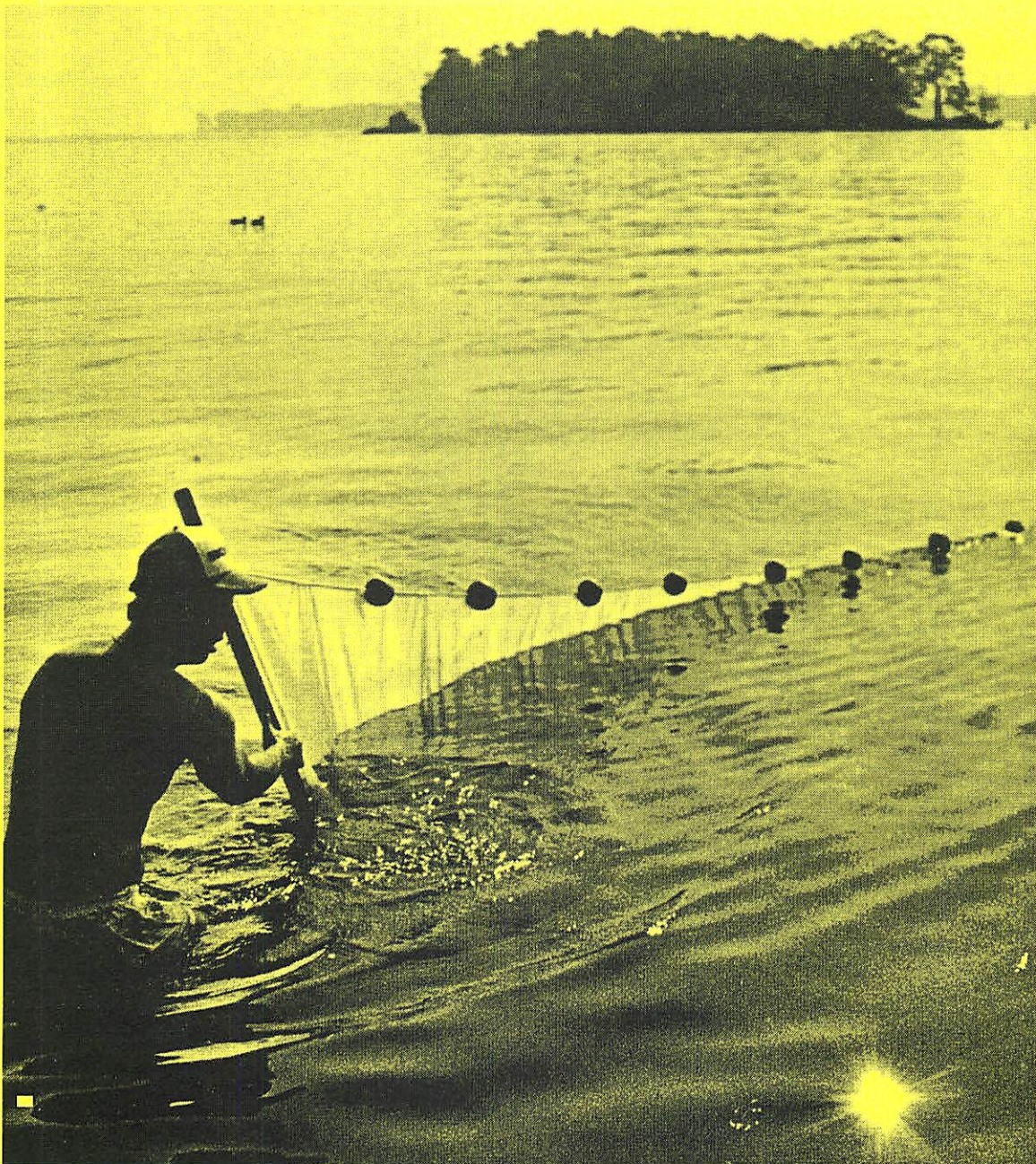


FIGURE 1

**Total Student Enrollment at Stone Laboratory
1980-2000**

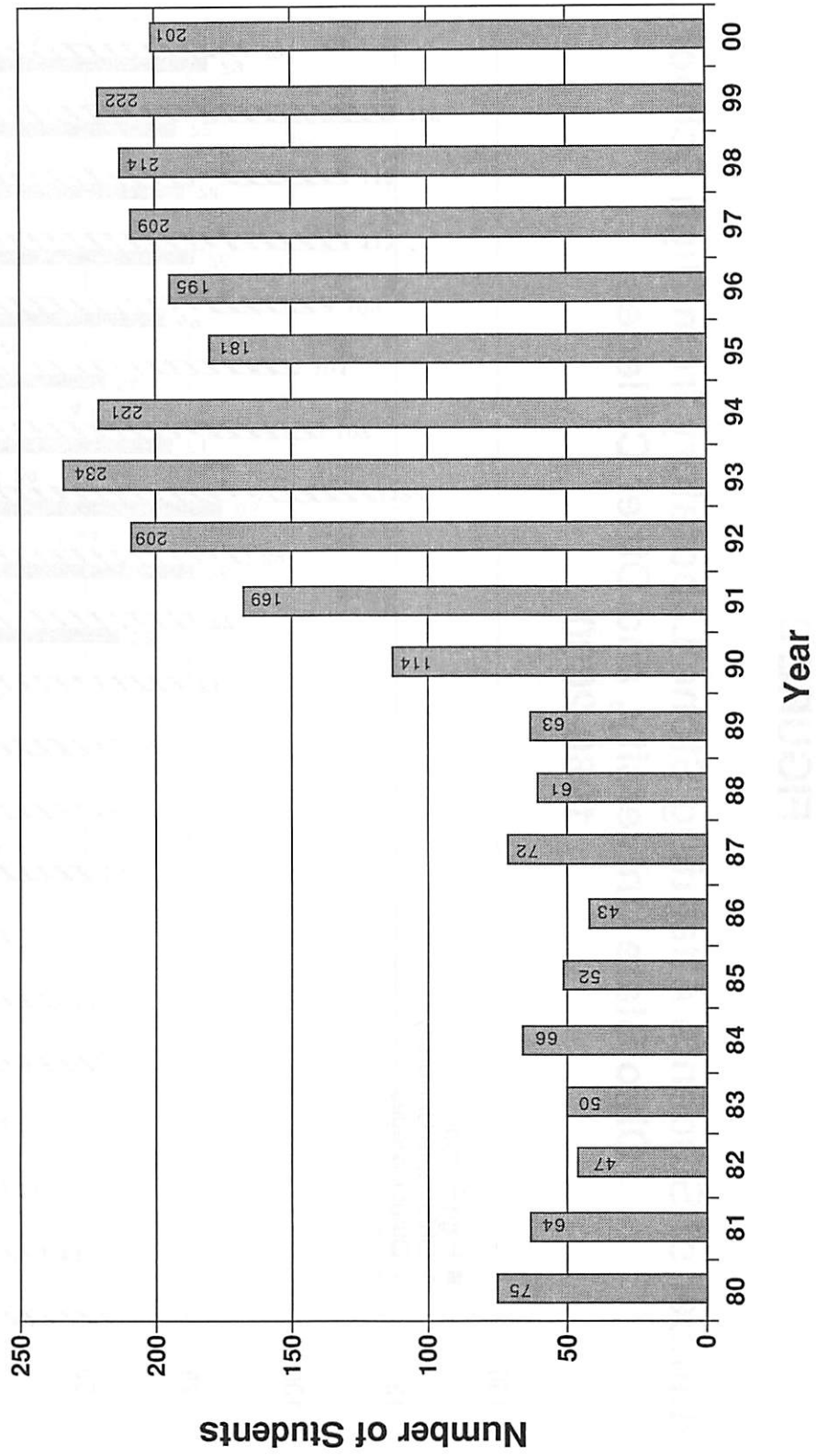
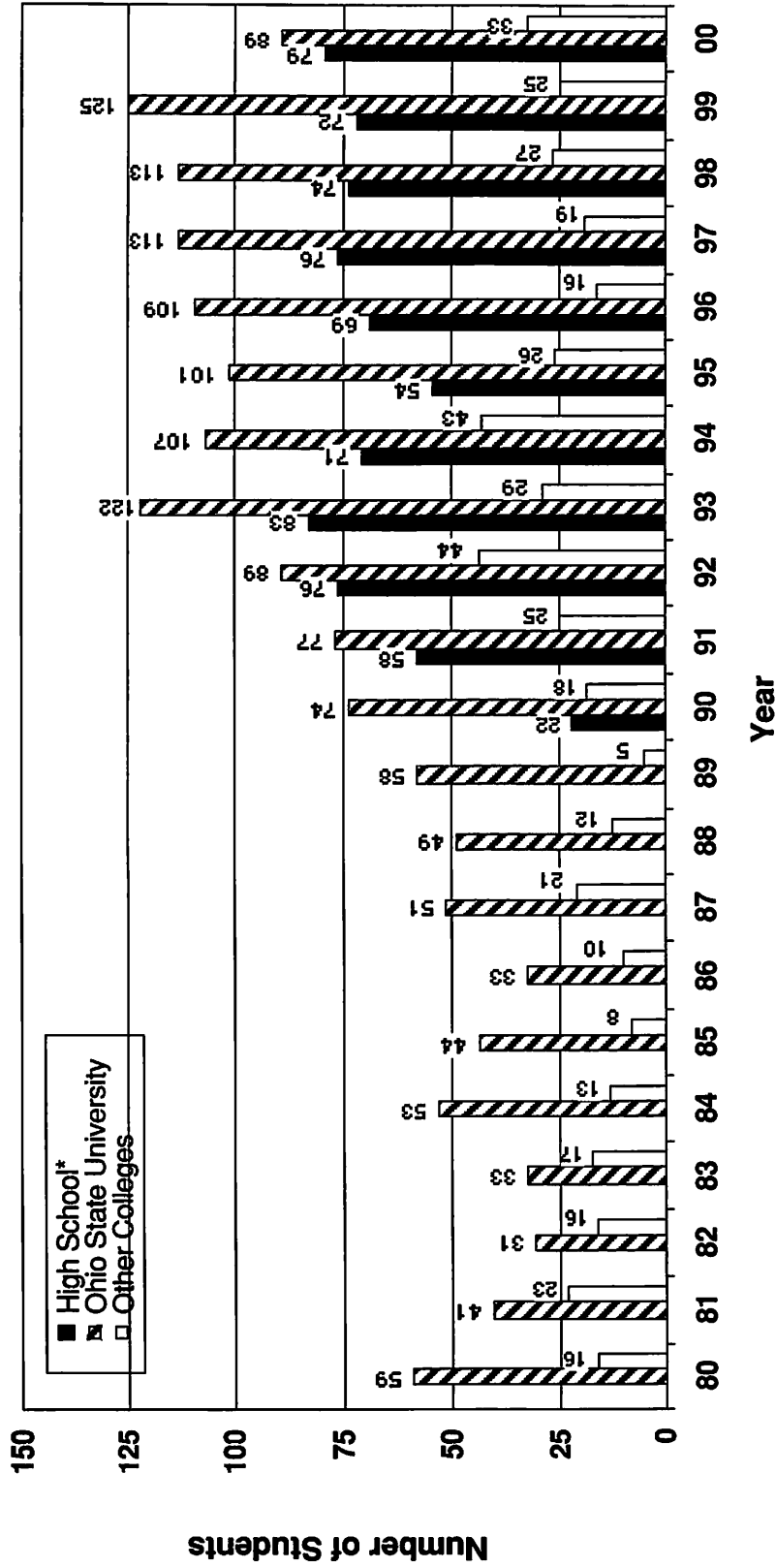


FIGURE 2

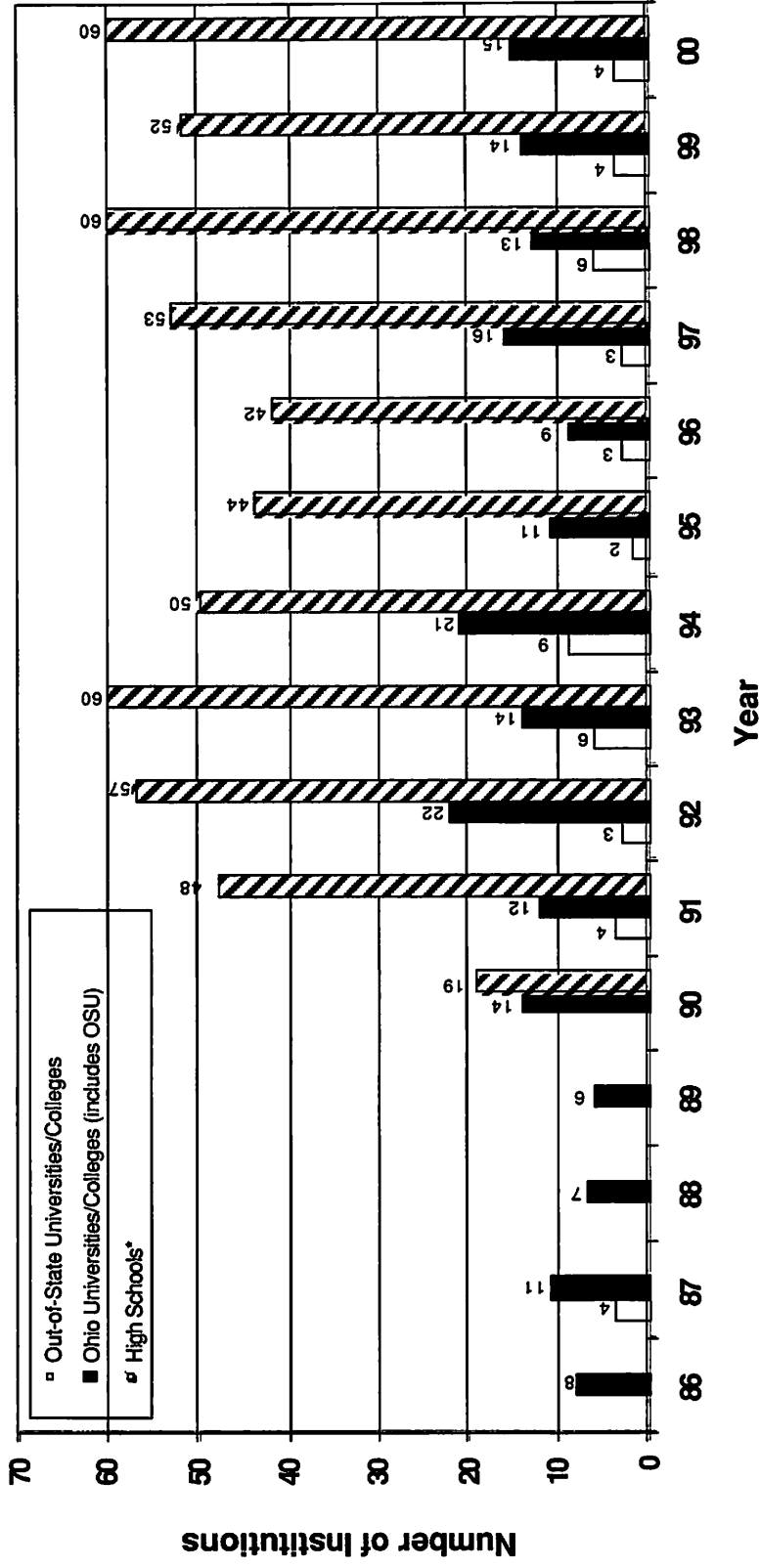
**Number of Students Attending Stone Laboratory from High Schools,
Ohio State University, and Other Colleges
1980-2000**



*Introductory courses for high school students began in the summer of 1990. These students enroll through Ohio State and receive undergraduate credit.

FIGURE 3

**Number of Institutions Represented by Students at Stone Laboratory
1986-2000**



*Introductory courses for high school students began in the summer of 1990. These students enroll through Ohio State and receive undergraduate credit.

FIGURE 4
Number of Undergraduate, Graduate and High School Students
Attending Stone Laboratory
1985-2000



*Introductory courses for high school students began in the summer of 1990. These students enroll through Ohio State and receive undergraduate credit.

FIGURE 5
Credit Hours of Student Enrollment at Stone Laboratory
1987-2000

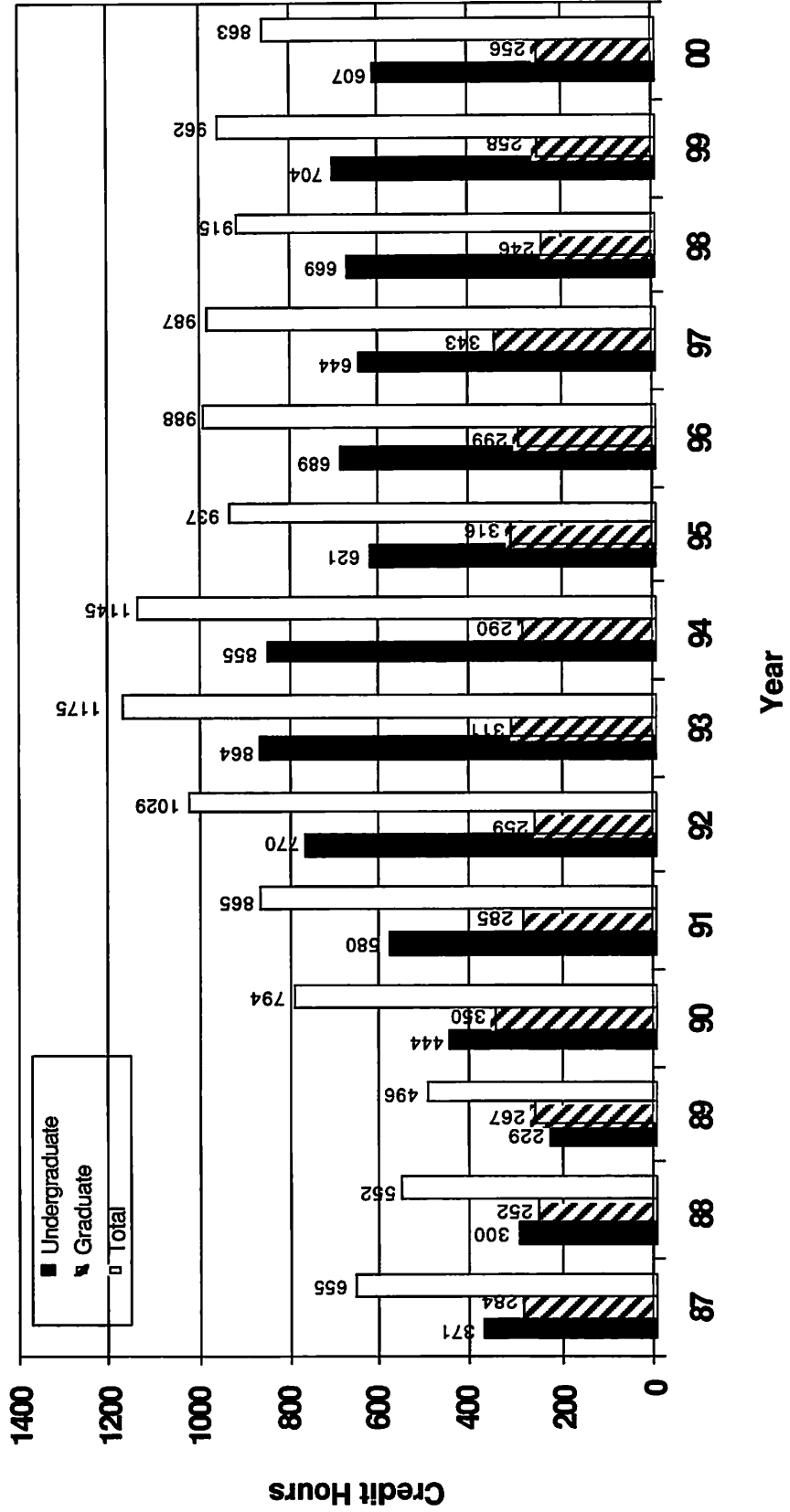


FIGURE 6
Number of Male and Female Students Attending Stone Laboratory
1986-2000

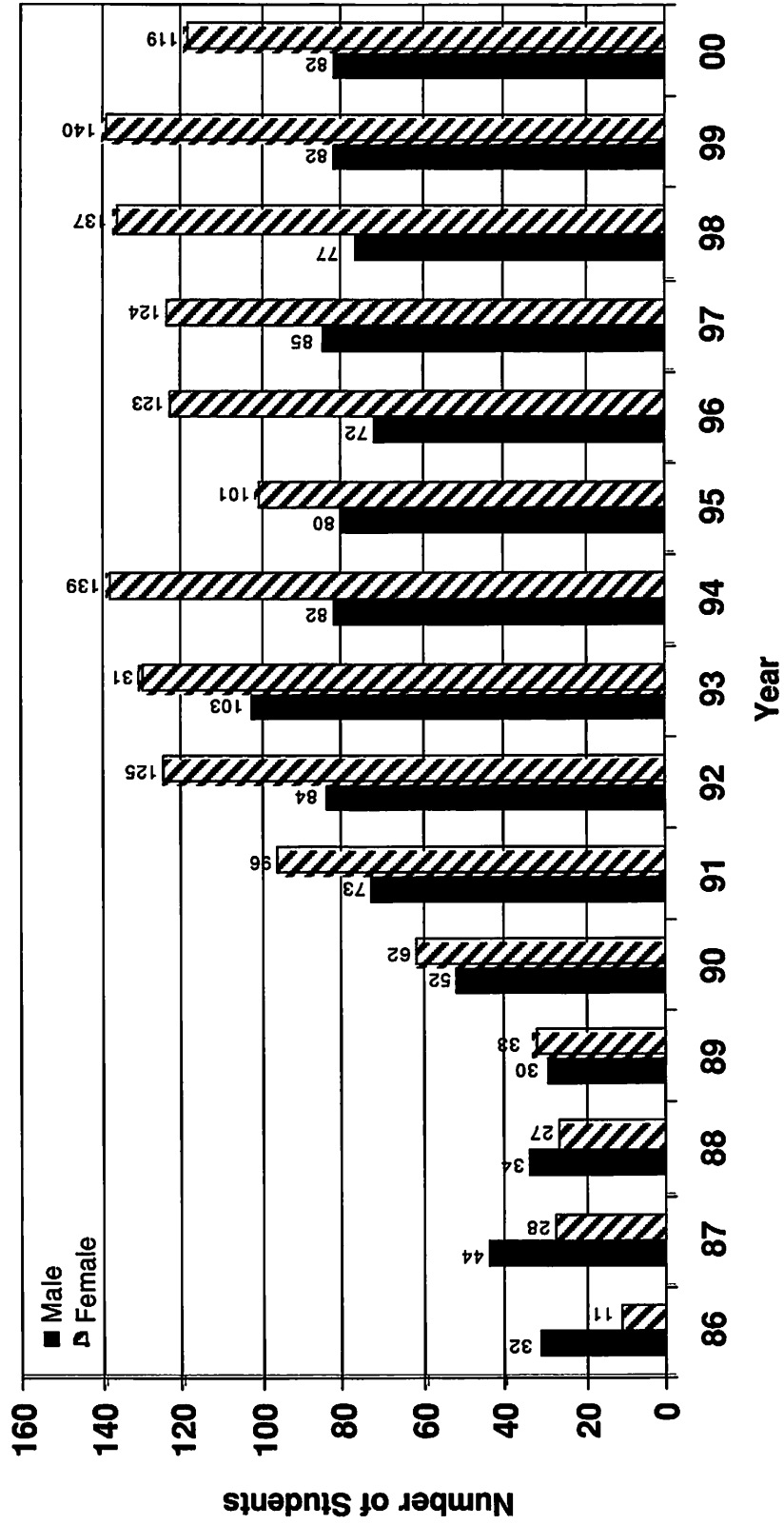
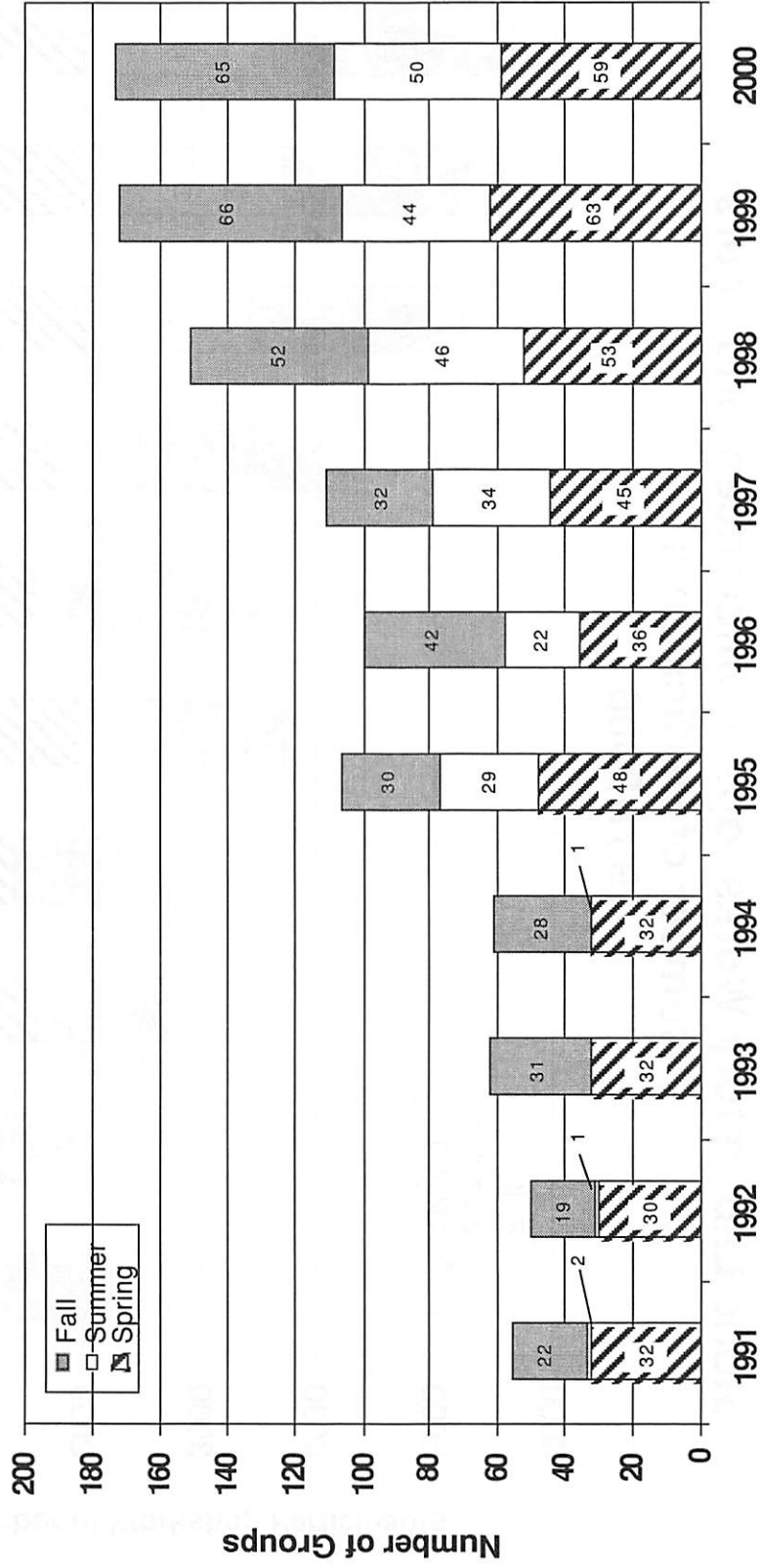


FIGURE 7

Stone Laboratory Workshops, Conferences, and Tours: Number of Groups 1991-2000



Year

FIGURE 8

**Stone Laboratory Workshops, Conferences, and Tours:
Number of Participants
1991-2000**

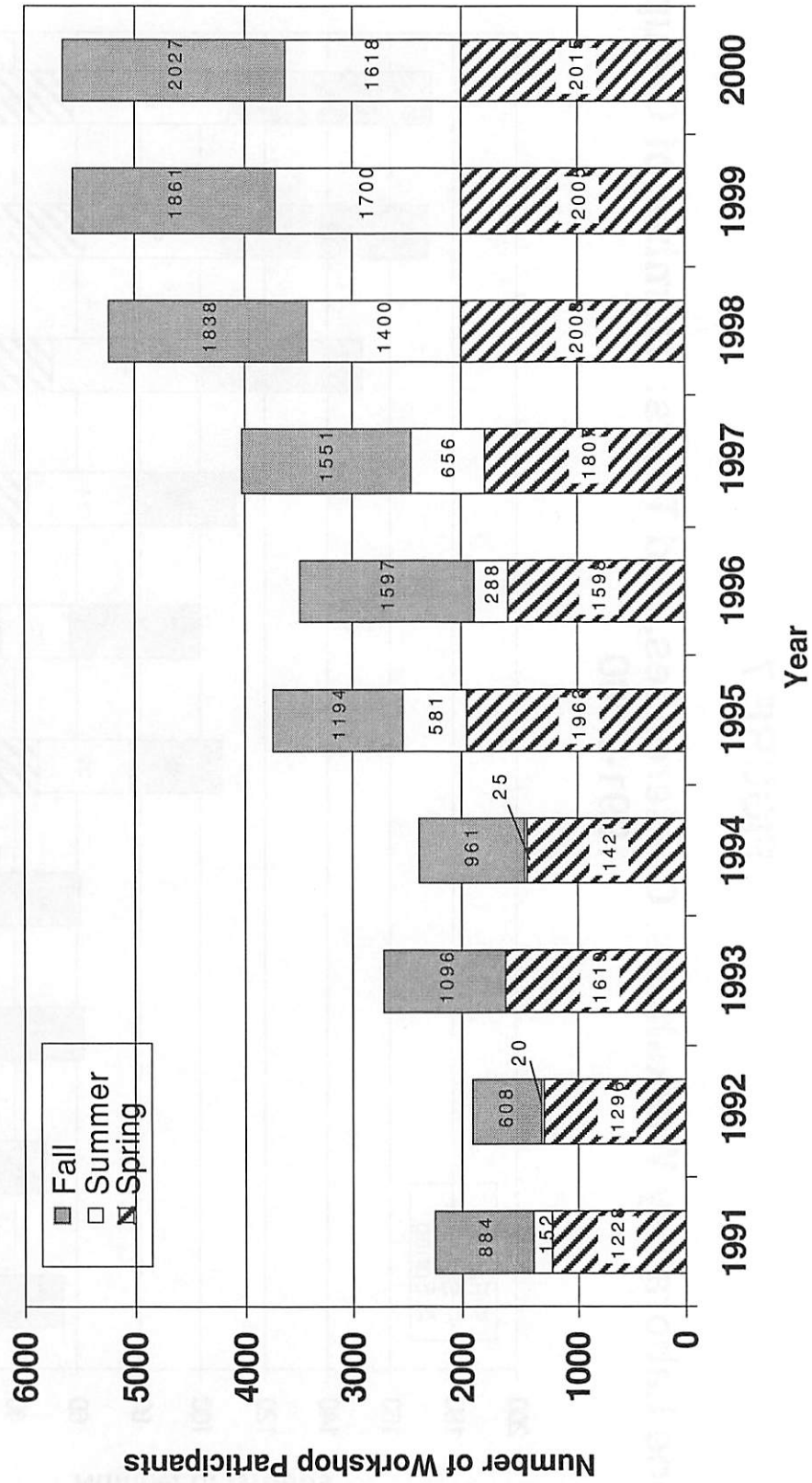
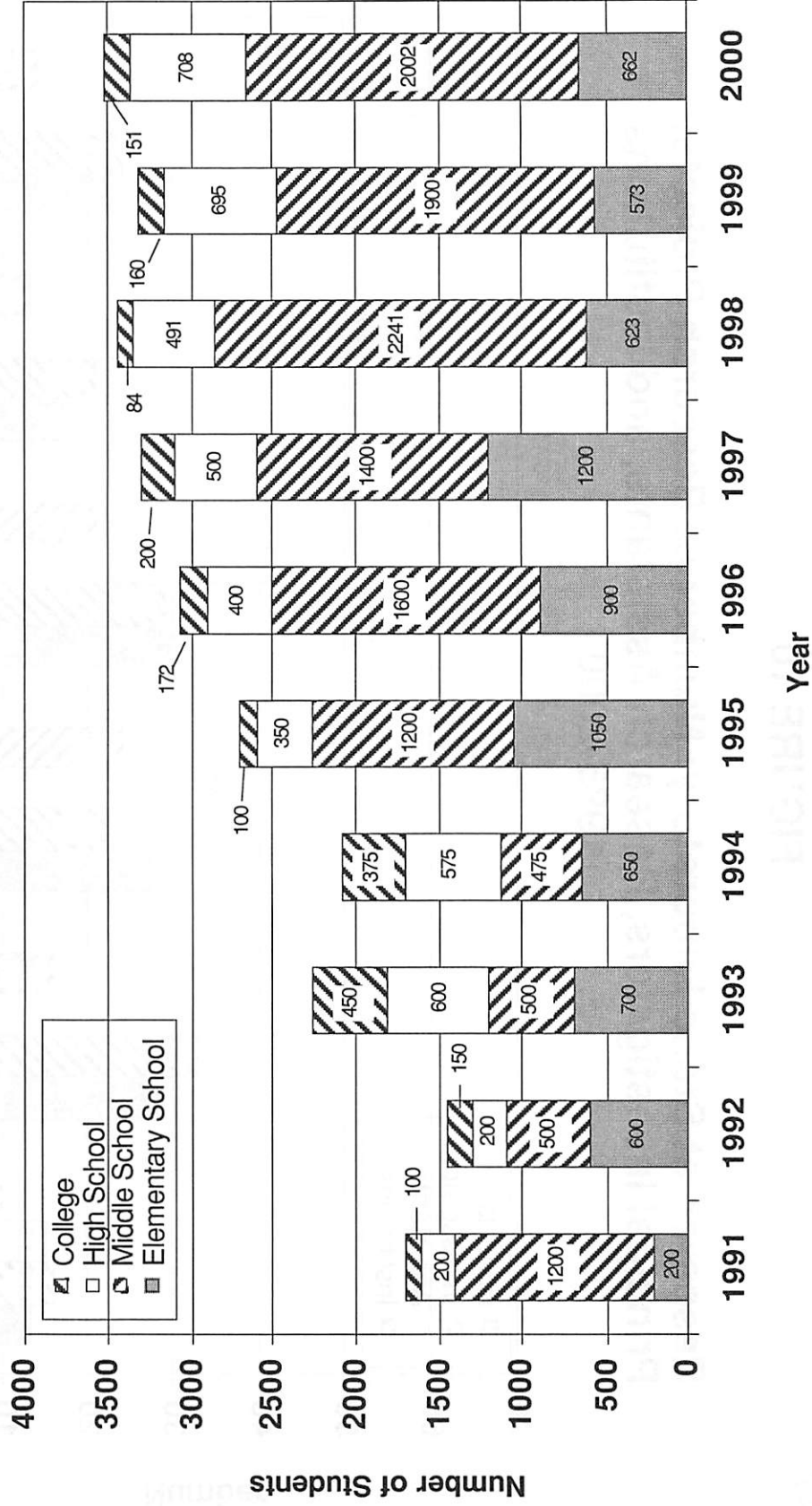


FIGURE 9

**Stone Laboratory Workshop Program: Composition of Participating Students*
1991-2000**



* Excluding adult groups

FIGURE 10

Research at Stone Laboratory: Number of Research Projects, Principal Investigators, Research Assistants, and Institutions 1995-2000

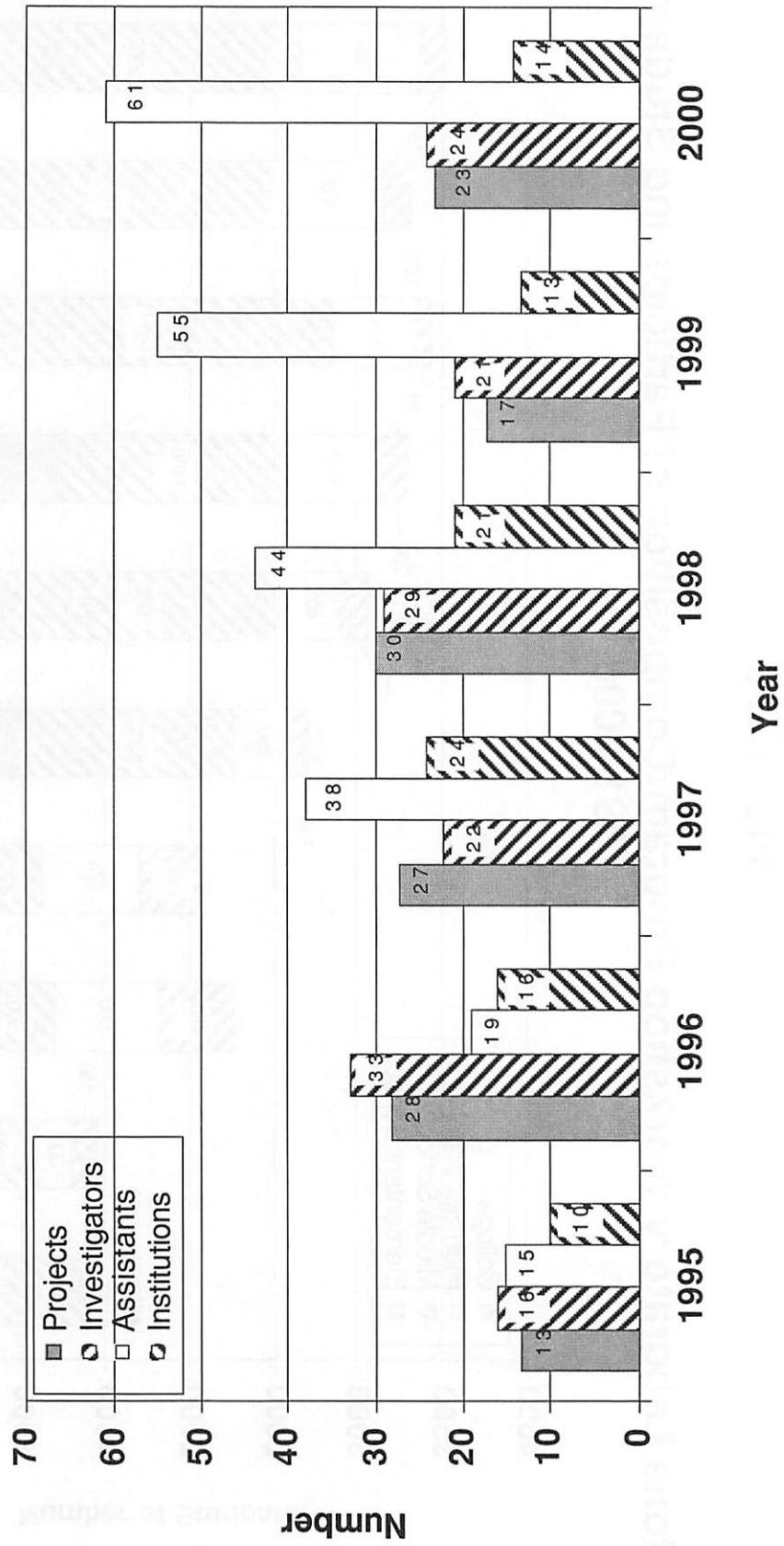


FIGURE 11

**Number of Students Receiving Stone Laboratory Scholarships for
Summer College Programs
1988-2000**

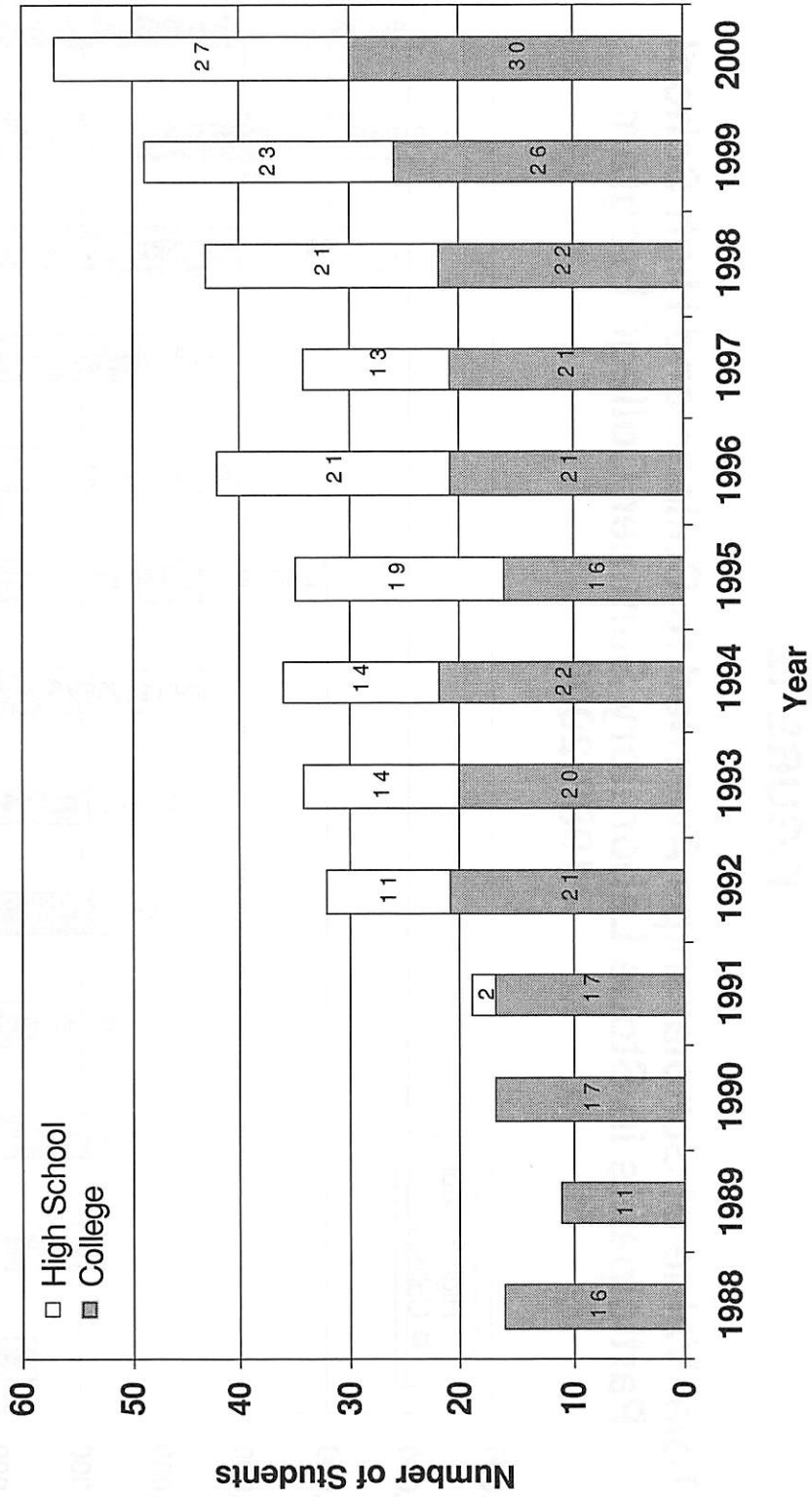
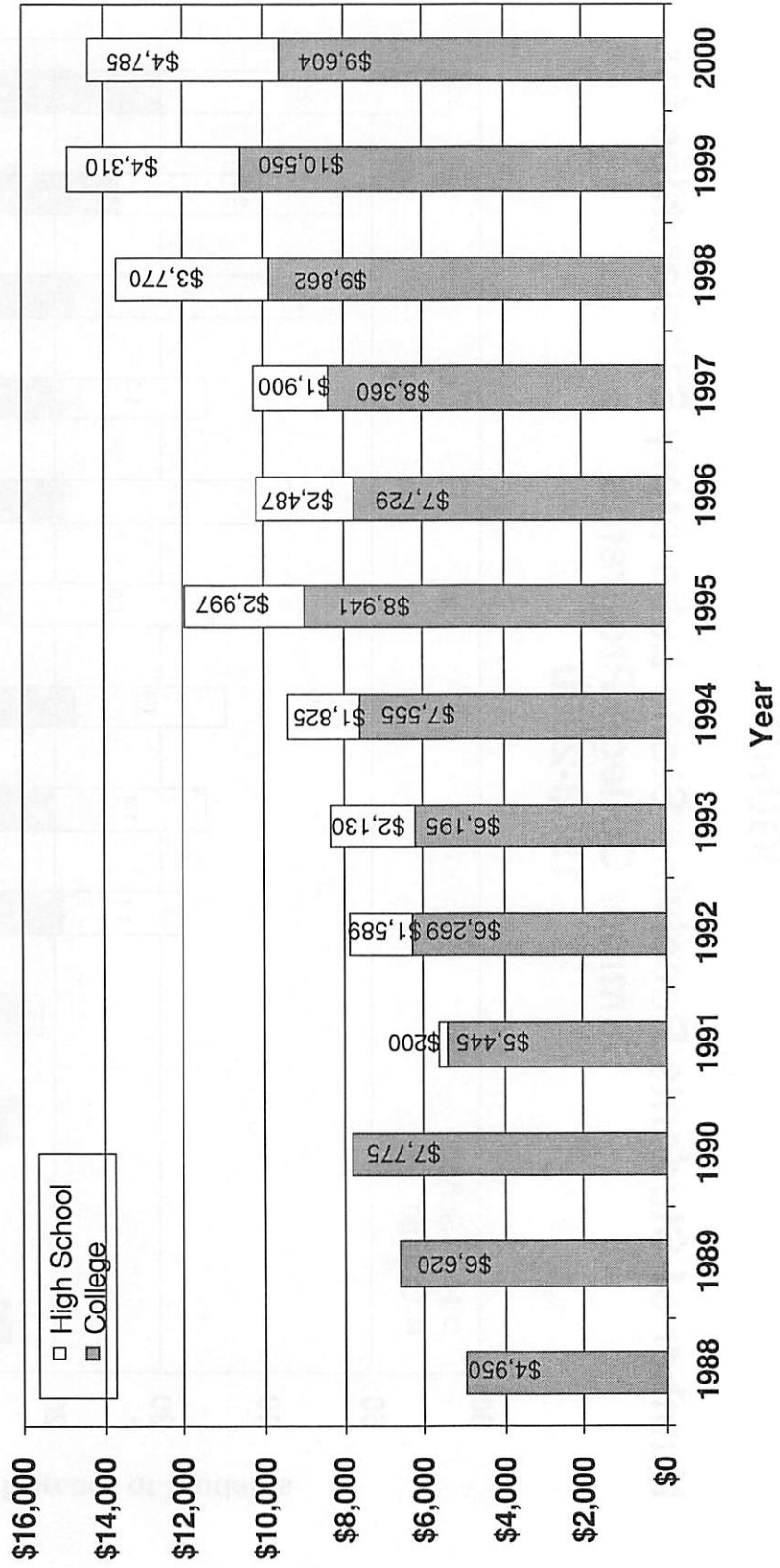


FIGURE 12

Total Value of Scholarships Awarded to College and High School Participants in Stone Laboratory Summer College Program 1988-2000



STONE LABORATORY 2000 PROGRAM REVIEW



TABLES



TABLE 1

**Stone Laboratory Staff
2000**

Administration		
Jeffrey M. Reutter	Director	
Bonita C. Cordi	Secretary and Receptionist	
Allen J. Duff	Building Maintenance Superintendent, Physical Facilities, Put-in-Bay	
Kelly L. Dress	Laboratory Office Associate, Put-in-Bay	
Rosanne W. Fortner	Associate Director	
John R. Hageman	Laboratory Manager, Put-in-Bay	
Richard D. Lighthiser	Director, Maintenance, Physical Facilities	
J. Stephen Martin	Manager, Housing and Food Service, Put-in-Bay	
Arleen N. Pineda	Program Coordinator	
Gerald K. Pullins	Assistant Director, Maintenance, Physical Facilities	
Karen T. Ricker	Communications Coordinator	
R. Chris Stanton	Assistant to the Director	
Matt A. Thomas	Assistant Laboratory Manager, Put-in-Bay	
John L. Tripp	Business Manager	
Diane S. Whitbeck	Assistant Director, Housing, Food Services and Event Centers	
Teaching Faculty		
David J. Berg	EEOB 125- <i>Introductory Aquatic Biology</i>	Aug 6 - Aug 12
Diane H. Cantrell	Nat Res 691- <i>National Curricula for Water Education</i>	Jun 25, Jul 9 & 16
John M. Condit	EEOB 126- <i>Introduction to the Study of Birds</i>	Jun 11 - Jun 17
“	EEOB 694- <i>Ornithology for Teachers</i>	Jun 25 - Jul 1
David A. Culver	EEOB 694- <i>Experimental Aquatic Ecology and Research</i>	Jun 18 - Jul 19
Helen M. Domske	Nat Res 614- <i>Marine and Aquatic Education: Tropical Studies</i>	Aug 8 - Aug 17
Rosanne W. Fortner	Nat Res 614- <i>Marine and Aquatic Education: Tropical Studies</i>	Aug 8 - Aug 17
“	Nat Res 690- <i>Global Change Education</i>	Jun 11 - Jun 17
“	Nat Res 691- <i>National Curricula for Water Education</i>	Jun 25, Jul 9 & 16
“	Nat Res 893- <i>Project Exploration Seminar for Teachers</i>	Arranged - Term 1
John E. Gannon	EEOB 653- <i>Fish Ecology</i>	Jul 20 - Aug 19
Robert T. Heath	EEOB 694- <i>Experimental Aquatic Ecology and Research</i>	Jun 18 - Jul 19
Charles E. Herdendorf	EEOB 694- <i>Biological Oceanography for Educators</i>	Jul 2 - Jul 8
Michael A. Hoggarth	EEOB 651- <i>Field Zoology</i>	Jun 18 - Jul 19
David L. Johnson	EEOB 125- <i>Introductory Aquatic Biology</i>	Jun 4 - Jun 10
“	EEOB 125- <i>Introductory Aquatic Biology</i>	Jul 23 - Jul 29
“	EEOB 125- <i>Introductory Aquatic Biology</i>	Jul 30 - Aug 5
David J. Jude	EEOB 653- <i>Fish Ecology</i>	Jul 20 - Aug 19
Robert A. Klips	EEOB 110- <i>Introduction to Local Flora</i>	Jul 9 - Jul 15
Kenneth A. Krieger	EEOB 652- <i>Limnology</i>	Jun 18 - Jul 19
Lawrence A. Krissek	Geol Sciences 107- <i>Field-Based Introduction to Oceanography</i>	Jun 11 - Jun 17
“	Geol Sciences 584- <i>Prin of Oceanography for Science Teachers</i>	Jun 18 - Jun 24
“	Geol Sciences 583/801- <i>Geologic Setting of Lake Erie</i>	Aug 5 - Aug 11
Scudder D. Mackey	Geol Sciences 583/801- <i>Geologic Setting of Lake Erie</i>	Aug 5 - Aug 11
David L. Moore	EEOB 611- <i>Higher Aquatic Plants</i>	Jul 20 - Aug 19
Robert E. Roth	EEOB 691- <i>National Curricula for Water Education</i>	Jun 25, Jul 9 & 16
C. Lavett Smith	EEOB 621- <i>Ichthyology</i>	Jun 18 - Jul 19
R. Chris Stanton	Entomology 126- <i>Introductory Insect Biology</i>	Aug 13 - Aug 19
Ann M. Stoeckmann	EEOB 652- <i>Limnology</i>	Jun 18 - Jul 19
Carmen E. Trisler	Entomology 612- <i>Aquatic Entomology</i>	Jul 20 - Aug 19
Lin Wu	EEOB 694- <i>Experimental Aquatic Ecology and Research</i>	Jun 18 - Jul 19

Table 1 – 2000 cont'd

Graduate Teaching Associates

David L. Banta*	Fish Ecology	t2
Marc A. Branham	Introductory Insect Biology	w11
Lisa A. Brohl	Aquatic Entomology	t2
Shelly A. Judge	Field-Based Introduction to Oceanography	w02
“	Principles of Oceanography for Science Teachers	w03
Douglas D. Kane ¹	Experimental Aquatic Ecology and Research	t1
“	Higher Aquatic Plants	t2
Jeffrey P. Neubig	Introduction to the Study of Birds	w02
“	Ornithology for Teachers	w04
Michael J. Palmer ^{1*}	Limnology	t1
Danielle A. Ross	Global Change Education	w02
Jeff A. Spoelstra	Ichthyology	t1
Thomas J. Thorne*	Introductory Aquatic Biology	w01
“	Field Zoology	t1
“	Introductory Aquatic Biology	w08
“	Introductory Aquatic Biology	w09
“	Introductory Aquatic Biology	w10
Lynette C. Werner*	Introduction to Local Flora	w06

*non-graduate Ohio State University teaching associate

¹ also enrolled in Stone Laboratory core courses

Student Research Assistants (also enrolled in Stone Laboratory courses)

Joseph D. Conroy	Research, t1 mwf
Eric Kohagen	Research, t1 trs
Erin E. Pekar	Special Research, t2

* Student paid by researcher, not by Stone Lab

Student Assistants

Anne M. Csipke	Laboratory, t1 trs; Bookstore, t2
Julianne Dempsey	Laboratory, t2 trs
Hayden Emery	Library, t2
Robert T. Getz	Laboratory, t2 mwf
Benjamin W. Heinen	Laboratory, t1 trs
Michael J. Palmer	Laboratory, t2 trs
Amanda J. Woodruff	Laboratory, t2 mwf

Table 1 – 2000 cont'd

Office and Technical Staff

Bonita C. Cordi	Office Associate, Columbus Office
Cindy A. Hayter	Graphic Illustrator, Columbus Office
David L. Banta	Courier/Office Assistant, Put-in-Bay Office
Thomas J. Thorne	Courier/Office Assistant, Put-in-Bay Office

Workshop Assistants

David L. Banta	spring	fall
Lisa A. Kutschbach-Brohl	spring	fall
Lianne L. Davies		fall
Heather Newstetter	spring	
Michael J. Palmer		fall
Karen N. Riddle	spring	fall
Thomas J. Thorne	spring	fall

TABLE 2

**Stone Laboratory Curriculum
2000**

EEOB 110 • Introduction to Local Flora

Week 6, July 9-July 15Dr. Robert A. Klips
An introduction to the identification and ecology of terrestrial and wetland vegetation.
3 undergraduate credit hours.

EEOB 125 • Introductory Aquatic Biology

Week 1, June 4-June 10.....Dr. David L. Johnson
Week 8, July 23-July 29Dr. David L. Johnson
Week 9, July 30-August 5Dr. David L. Johnson
Week 10, August 6-August 12 Dr. David J. Berg
An introduction to field techniques and the study of aquatic biology providing undergraduate credit for college students and advanced high school students. 3 undergraduate credit hours.

EEOB 126 • Introduction to the Study of Birds

Week 2, June 11-June 17..... Mr. John M. Condit
An introduction to the study of birds including field techniques and identification providing undergraduate credit for college students and advanced high school students. 3 undergraduate credit hours.

EEOB 505 • Marine Biology and Ecology

CANCELED

Term 2, July 20-August 19, TRSInstructor TBA
Modern concepts in oceanography, including chemical, physical, and biological processes of the sea, environmental factors influencing marine life, and human impact on ocean resources. 5 undergraduate/graduate credit hours.

EEOB 611 • Higher Aquatic Plants

Term 2, July 20-August 19, MWF Dr. David L. Moore
Aquatic plants, other than the algae of the Great Lakes region; field and laboratory work on their identification and ecological and geographical relations. 5 undergraduate/graduate credit hours.

EEOB 621 • Ichthyology

Term 1, June 18-July 19, MWFDr. C. Lavett Smith
Study of the distribution and classification of fishes, which includes methods of identification, collection, and preservation. 5 undergraduate/graduate credit hours.

EEOB 651 • Field Zoology

Term 1, June 18-July 19, MWFDr. Michael A. Hoggarth
Field and laboratory identification of aquatic and terrestrial vertebrates and invertebrates of the region, in relation to habitats occupied. 5 undergraduate/graduate credit hours.

EEOB = Department of Evolution, Ecology, and Organismal Biology

Table 2 - 2000 cont'd

EEOB 652 • Limnology

Term 1, June 18-July 19, TRS..... Drs. Kenneth A. Krieger and Ann M. Stoeckmann
Study of the physical, geological, chemical, and biological factors influencing freshwater life;
field and laboratory techniques for determining lake morphometry, chemistry, and biological
productivity are emphasized. 5 undergraduate/graduate credit hours.

EEOB 653 • Fish Ecology

Term 2, July 20-August 19, TRS Drs. John E. Gannon and David J. Jude
Field and laboratory studies of life histories and interspecific relationships of fishes, and of the
various factors influencing their abundance. 5 undergraduate/graduate credit hours.

EEOB 694 • Experimental Aquatic Ecology and Research

Term 1, June 18-July 19, TRS..... Drs. David A. Culver, Robert T. Heath, and Lin Wu
Course designed to prepare students for undergraduate or graduate research in aquatic ecology by
introducing them to the techniques of literature review, hypothesis testing, data collection and
analysis, and publication. 5 undergraduate/graduate credit hours.

EEOB 694 • Ornithology for Teachers

Week 4, June 25-July 1 Mr. John M. Condit
Field and laboratory studies of the visual and acoustical characteristics of common Ohio birds;
discussion of world-wide birds and their classification; identification of resource materials for
classroom use; for classroom teachers and nonformal educators. 3 undergraduate/graduate credit
hours.

EEOB 694 • Biological Oceanography for Educators

Week 5, July 2-July 8..... Dr. Charles E. Herdendorf
Educators will observe live marine organisms and practice techniques used by modern marine
biologists in studying the biota of various coastal and deep ocean environments. 3 undergraduate/
graduate credit hours.

Entomology 126 • Introductory Insect Biology

Week 11, August 13-August 19 Dr. R. Chris Stanton
An introduction to the study of insects including biology, ecology, identification, and field
techniques providing undergraduate credit for college students and advanced high school
students. 3 undergraduate credit hours.

Entomology 612 • Aquatic Entomology

Term 2, July 20-August 19, MWF Dr. Carmen E. Trisler
Designed for preparation in the teaching of biology or for research on aquatic resources; emphasis
on taxonomy and ecology of immature and adult aquatic insects. 5 undergraduate/graduate credit
hours.

Entomology 520 • Insect Biology for Teachers

Week 6, July 9-July 15..... Dr. Carmen E. Trisler
A hands-on course for K-12 teachers in formal and informal education. Includes morphology,
identification, and unique behaviors of insects as well as activities to use with students for both
terrestrial and aquatic insects. Teachers will each develop meaningful and useful curriculum
activities about insects. 3 undergraduate/graduate credit hours.

CANCELED

Table 2 - 2000 cont'd

Geological Sciences 107 • Field-Based Introduction to Oceanography

Week 2, June 11-June 17..... Dr. Larry A. Krissek
An introduction to the study of oceanography including field techniques providing undergraduate credit for college students and advanced high school students. 3 undergraduate credit hours.

Geological Sciences 583 • Geologic Setting of Lake Erie

Special Offering, August 5-August 11 Drs. Scudder D. Mackey and Larry A. Krissek
Examination of geologic features along the southern shore of Lake Erie during a week-long van trip, including an interpretation of the geologic history of Ohio in the Lake Erie basin, and an examination of relationships between human activity and the geology of the area. Approximate cost for room, meals, and transportation during one-week long van trip will be \$350. Class will originate from and end at the Fawcett Center in Columbus, Ohio. 3 undergraduate/graduate credit hours.

Geological Sciences 584 • Principles of Oceanography for Science Teachers

Week 3, June 18-June 24..... Dr. Larry A. Krissek
Origin, development, and structure of oceanic basins and their contents; contemporary oceanic processes of geologic significance. Discussions of effective classroom presentations of oceanographic principles. Not open to students with credit for Geological Sciences 107 or 206. 3 undergraduate/graduate credit hours.

Natural Resources 690 • Global Change Education

Week 2, June 11-June 17..... Dr. Rosanne W. Fortner
Materials and methods for presenting interdisciplinary aspects of global climate change and its impacts on global and regional settings. For classroom teachers, nonformal educators, or education majors with senior rank or above. 3 undergraduate/graduate credit hours.

Natural Resources 893 • Project Exploration Seminar for Teachers

To be arranged during Term 1 between June 18-July 19 Dr. Rosanne W. Fortner
Week 7, July 16-July 22 CANCELED Dr. Rosanne W. Fortner
Individual studies in selected areas not otherwise offered in natural resources. Graduate standing and permission of instructor. This course is graded S/U. 3 graduate credit hours.

SPECIAL OFFERINGS:

Natural Resources 614 • Marine and Aquatic Education: Tropical Studies

August 8-August 17 Dr. Rosanne W. Fortner and Helen M. Domske
A 10-day course at a marine lab in Jamaica, West Indies. Lectures and field study focusing on coral reefs; reef fish and invertebrates; symbiotic relationships; rocky shore zonation; mangrove swamps; turtle grass beds and others. Participants must have swimming/snorkeling proficiency. 3 undergraduate/graduate credit hours.

Natural Resources 691 • National Curricula for Water Education

June 25, July 9, July 16 Drs. Diane H. Cantrell, Rosanne W. Fortner and Robert E. Roth
Materials, methods and certification for teaching with nationally acclaimed environmental curricula: Project WET, Aquatic WILD, and WOW (Wonders of Wetlands). This course is graded S/U. 2 undergraduate/graduate credit hours.

Table 2 - 2000 cont'd

Individual Studies 293/693

Qualified students may select problems in botany, entomology, microbiology, zoology or other participating departments, and may choose the instructor with whom they desire to work. 1-5 credit hours.

Research 998/999

This number is reserved for graduate students in a degree program conducting research for a M.S. thesis or Ph.D. dissertation.

Honor Course H783

This number is reserved for students in the honors program desiring to select problems in Individual Studies.

TABLE 3

**STONE LABORATORY GUEST LECTURES*
2000**

All lectures begin at 7:45 PM. A university boat leaves the dock in front of the Research Building at 7:30 PM before each lecture. Lectures normally conclude at approximately 9:00 PM. Transportation to and from Gibraltar Island is free.

Week 1	6/8	No Lecture
Week 2	6/15	Christopher Jones , Director, Ohio EPA "The Conservation and Revitalization Fund and Related Issues"
TERM 1		
Week 3	6/22	Dr. Jan Miller , US Army Corps of Engineers "Research and Policy Interactions: Dredging and Dredged Material Management in Toledo Harbor"
Week 4	6/29	Dr. Jane Forsythe , Bowling Green State University "The Geologic Setting of Lake Erie"
Week 5	7/6	Dr. Charles E. Herdendorf , Ohio State University "Science on a Deep Ocean Shipwreck: Exploring the Gold Rush Steamer SS Central America"
Week 6	7/13	Steve Pollick , Outdoors Editor, <i>Toledo Blade</i> "On the Trail of the Iditarod 2000: Alaska's Last Great Race"
Week 7	7/20	Transition between terms—No Lecture
TERM 2		
Week 8	7/27	Dr. Frank Quinn , Great Lakes Environmental Research Laboratory, NOAA "Great Lakes Water Levels: Past, Present and Future"
Week 9	8/3	Gary L. Isbell , Administrator, Fisheries Management and Research Group, Division of Wildlife, ODNR "Lake Erie Fisheries: Population Status and Trends"
Week 10	8/10	Dr. Steve Brandt , Director, Great Lakes Environmental Research Laboratory, NOAA "Current Research at GLERL"
Week 11	8/17	Finals Week—No Lecture
Week 12	<u>8/26</u>	Open House—12:00-4:00 Saturday—Open to Public Friends of Stone Laboratory Annual Meeting and Educational Programs and Tours of Gibraltar Island and South Bass Island Lighthouse

* Sponsored by the Friends of Stone Laboratory and the Office of Housing and Food Service

**Stone Laboratory Workshops, Conferences and Tours
2000**

Date	Group Name/City/Leader	No.	Description
4/15-16	Friends of Stone Laboratory Bd. of Directors Mike Heineken	23	Conference
4/17	Kenwood Elementary I / Bowling Green, OH Kent McClary	37	Workshop
4/18	Kenwood Elementary II / Bowling Green, OH Kent McClary	46	Workshop
4/19	All Saints Catholic School I / Rossford, OH Carol Gutierrez	18	Workshop
4/19	Wynford H.S. / Bucyrus, OH Glenn Smith	18	Workshop
4/19-20	Kelley's Island School / Kelley's Island, OH Darcy McClary	15	Workshop
4/20-21	Orange High School / Pepper Pike, OH Ms. Shrader	14	Workshop
4/24	St. Paul's Girl Scouts / Westerville, OH Marie Higgins	12	Workshop
4/24-25	Jonathan Alder / Plain City, OH Brenda Boyd	14	Workshop
4/25-26	Northwood M.S. I / Northwood, OH Lara Fish	40	Workshop
4/26	Northwood M.S. II / Northwood, OH Lara Fish	49	Workshop
4/27	West Side Montessori / Toledo, OH David Lymanstall	41	Workshop
4/27-28	Harding High School I / Warren, OH Kay Clark	41	Workshop
4/28	Harding High School II / Warren, OH Kay Clark	41	Lighthouse Tour
4/28	Sacred Heart School / Shelby, OH Mary Obringer	16	Workshop
4/29	Clay High School / Oregon, OH Denis Slotnick	21	Workshop

**Stone Laboratory Workshops, Conferences and Tours
2000**

Date	Group Name/City/Leader	No.	Description
5/1-2	Mills School I / Sandusky, OH Patricia Hamilton	45	Workshop
5/2-3	Mills School II / Sandusky, OH Patricia Hamilton	47	Workshop
5/3-4	Mills School III / Sandusky, OH Patricia Hamilton	43	Workshop
5/4-5	Mills School IV / Sandusky, OH Patricia Hamilton	50	Workshop
5/5-6	Sewickley Academy, Sewickley, PA Susan Harrison	71	Workshop
5/6	O.S.U. Geology / Columbus, OH Larry Krissek	9	Workshop
5/6-7	Ohio Sea Grant Staff Advisory Jeff Reutter	26	Conference
5/8	Elderhostel PIB I / Put-in-Bay, OH Ed Isaly	30	Workshop
5/8-9	Mills School V / Sandusky, OH Patricia Hamilton	39	Workshop
5/9-10	Mills School VI / Sandusky, OH Patricia Hamilton	45	Workshop
5/10	Padua Franciscan H.S. / Parma, OH Kristin Gillombordo, Casimra Kotrasic, Bill Quinn & Nate Repp	4	Shadows
5/10-11	Mills School VII / Sandusky, OH Patricia Hamilton	47	Workshop
5/11	Ladyfield Catholic School I / Toledo, OH Pamela Duganski	34	Workshop
5/11-12	West Carrollton / West Carrollton, OH Ruth Charles	64	Workshop
5/11-14	Outdoor Writers of Ohio / OH Fred Snyder	53	Conference
5/12-13	Granville Middle School / Granville, OH Kay Porr	36	Workshop

**Stone Laboratory Workshops, Conferences and Tours
2000**

Date	Group Name/City/Leader	No.	Description
5/13	Ladyfield Catholic School II / Toledo, OH Pamela Duganski	28	Workshop
5/14	St. Johns Jesuit H.S. / Toledo, OH Rich Delong H.S. Intern	1	Shadow
5/15	Elderhostel PIB II / Put-in-Bay, OH Ed Isaly	28	Workshop
5/15-16	Perry/McCord Middle School / Worthington, OH Marty McTigue	64	Workshop
5/16-17	Toth Elementary / Perrysburg, OH Sue Boles	64	Workshop
5/16-17	Horizon TPS I / Devilbis / Toledo, OH Dinah Lattin	55	Workshop
5/18-19	Horizon TPS II / Devilbis / Toledo, OH Dinah Lattin	41	Workshop
5/19	Lucas Co. Youth Treatment Center / Toledo, OH Deloris Sampson	14	Workshop
5/19	Rogers High School / Toledo, OH C.J. Washington	14	Workshop
5/19	Woodward High School / Toledo, OH Paulette Cole	19	Workshop
5/20	Troop 2412 Girl Scouts / Columbus, OH Amy Yersavich	19	Workshop
5/22	Elderhostel PIB III / Put-in-Bay, OH Ed Islay	30	Workshop
5/22	Amherst Steel H.S. / Amherst, OH Darline Elsasser	52	Workshop
5/22-23	All Saints Catholic School II / Rossford, OH Carol Gutierrez	20	Workshop
5/22-23	Robinson Jr. High / Toledo, OH Diane McClellan	29	Workshop
5/24	Springfield South H.S. / Springfield, OH Michael Willets	9	Workshop
5/24	New Horizon-Perkins / Sandusky, OH Susan Melching	33	Workshop

**Stone Laboratory Workshops, Conferences and Tours
2000**

Date	Group Name/City/Leader	No.	Description
5/25	Put-in-Bay School / Put-in-Bay, OH Paul Genzman	9	Workshop
5/25-26	Englewood Elementary / Englewood, OH Sis Litvin	26	Workshop
5/25-26	Arlington Elementary / Toledo, OH Ruth Paul	29	Workshop
5/26	Whittier Middle School / Lorain, OH Lois Treboniak	31	Workshop
5/30	Grizzel Middle School I / Dublin, OH Larry Hohman	63	Workshop
5/31	Northern Ohio Assoc. of Herpetologists / OH Norm Damm	3	Tour
5/31	Grizzel Middle School II / Dublin, OH Larry Hohman	63	Workshop
6/1	Whiteford M.S. / Ottawa Lake, MI Susan Bixler	97	Workshop
6/1-2	Jones Middle School / Upper Arlington, OH David Evans	35	Workshop
6/3	British Sports Car Club Rally	50	Lighthouse Tour
6/6	Lake Erie Buffer Team Steve Davis	15	Conference
6/8	Huron Count SWCD / Norwalk, OH Susan Graham	17	Workshop
6/8	Jim and Anne Harding	2	Tour
6/8	Put-in-Bay Book Club / Put-in-Bay, OH Sharon Duggan	12	Workshop
6/15	Visitors to See Dr. Chris Jones Guest Lecture	7	Tour
6/22	Visitors to See Dr. Jan Miller Guest Lecture	2	Tour
6/26	B.G.S.U. Governors Summer Institute / OH Matt Partins	27	Workshop

**Stone Laboratory Workshops, Conferences and Tours
2000**

Date	Group Name/City/Leader	No.	Description
6/27	Jill Stechultz / OH	5	Tour
6/29	Visitors to See Dr. Jane Forsyth Guest Lecture	18	Tour
7/6	Ralph and Claudette Moore / Put-in-Bay, OH	2	Tour
7/10	B.G.S.U. Governors Summer Institute II / OH Matt Partin	31	Workshop
7/10-11	Louisiana Public Broadcasting System – Film Exotic Species Documentary Kevin Gautreux	4	Tour
7/11	Glen Helen Ecocamp / Yellow Springs, OH Gil Disanto	7	Workshop
7/12	Sandusky Register Dan Strohl and Mr. Flick (Photographer)	2	Tour
7/13	Visitors to See Steve Pollick Guest Lecture	15	Tour
7/15	Kent State Univ. Geography Dept. Joy Volpi	21	Tour
7/15	Backus Family	4	Tour
7/15	Bob and Carol Roth	2	Tour
7/20	Dr. F. Dominic Dattavio	5	Tour
7/20	O.D.N.R. Watercraft Pam Dillon	4	Tour
7/21	Legislative Day State & Federal Legislatures	159	Conference
7/25	Scott Carpenter Family	4	Tour
7/25	Boy Scout Troop 134 / Elyria, OH	20	Tour

**Stone Laboratory Workshops, Conferences and Tours
2000**

Date	Group Name/City/Leader	No.	Description
7/27	Ted Legibel Family	4	Tour
7/28	Bascus Family	3	Tour
7/29	Senator Jefrey Armbruster	9	Tour
7/29	Tuscarawus Co. 4-H Tours Ann Mamuw	58	Tour
7/31	Cooperative Lake Erie Workshop Dan Neuman	1	Workshop
8/2	Lucas Co. Youth Treatment Center / Toledo, OH Deloris Sampson	11	Workshop
8/3	O.S.U. Research Foundation / OH Linda Meadows	1	Tour
8/3	W.O.S.U. / OH Dorothy Miles	1	Tour/Interviews
8/3	Great Lakes Area Ecosystems Research Consortium Dr. Jeff Reutter	63	Conference
8/3	Visitors to See Gary Isbell Guest Lecture Gary Isbell	19	Tour
8/7	Bob Grimm Family	8	Tour
8/8	Hicks Family	6	Tour
8/8	O.S.U. OSHA Mgmt. Mark Byers	2	Tour
8/10	N.E. Ohio School Teachers Tess Wearsh	12	Workshop
8/10	Visitors to See Dr. Steve Brandt Guest Lecture	11	Tour
8/12	Bobby Moser Family	7	Tour
8/14	Stanton Family	6	Tour

**Stone Laboratory Workshops, Conferences and Tours
2000**

Date	Group Name/City/Leader	No.	Description
8/15	Ottawa / Lucas Co. Farm Services Agency Todd Warner	15	Conference
8/16	Retired N.A.S.A Employees Muriel Elam	11	Conference
8/18	Coll. Of Food, Agriculture & Enviro. Sciences Staff Advisory Council	16	Conference
8/18	Reynolds Family	5	Tour
8/19	Sandusky Radio Experimental League Denny McManamon	6	Lighthouse Tour
8/23-24	O.S.U. A.T.I. Staff Pat Harbert	11	Conference
8/25-27	Friends of Stone Laboratory Board Final Board Meeting	27	Meeting
8/26	Stone Laboratory Open House	860	Tour
8/26-27	Friends of Stone Laboratory Members Homecoming / Annual Meeting	48	Meeting
8/29-30	O.S.U. Plant Pathology Class Dr. Sally Miller	12	Field Trip
8/30-31	Phillips-Osborne School / Painesville, OH Meg Anderson	34	Workshop
8/30	Preble Co. SWCD Liz Cline and Ed Leas	54	Tour
8/31-9/1	Hathaway Brown School / Shaker Heights, OH Beth Armstrong	56	Workshop
9/5-6	Hilliard Station I / Hilliard, OH Jan Snyder	40	Workshop
9/5-6	International Joint Commission Great Lakes Research Mgrs.	11	Conference
9/6-7	Hilliard Station II / Hilliard, OH Jan Snyder	39	Workshop
9/7-8	Hilliard Station III / Hilliard, OH Jan Snyder	38	Workshop

**Stone Laboratory Workshops, Conferences and Tours
2000**

Date	Group Name/City/Leader	No.	Description
9/8-9	Park Street M.S. / Grove City, OH David Crosby	62	Workshop
9/11	Elderhostel PIB IV / Put-in-Bay, OH Ed Islay	30	Workshop
9/11-12	Bexley Middle School / Bexley, OH Marge Galloway	39	Workshop
9/12	Brecksville / Broadview Heights, OH Bob Berg	19	Workshop
9/13	Genoa High School German Club / Genoa, OH Connie Swaigemann	21	Tour
9/13-14	Highland High School / Medina, OH Betsy Gleason	30	Workshop
9/14-15	Woodside M.S. / Ft. Wayne, IN Jeff Beck	32	Workshop
9/14-15	Great Lakes Protection Fund Jill Woodyard	29	Conference
9/15	Jefferson Elementary / Port Clinton, OH Jim Bergman	54	Workshop
9/15-17	O.S.U. Molecular Genetics / Columbus, OH John Oberdick	53	Conference
9/15-17	Sandusky Radio Experimental League H.A.M. Radio Club Event	9	Meeting
9/16	Zionsville United Methodist Men's Ministry Bob Grimm	28	Tour
9/18	Lorain Co. JVS / Oberlin, OH Ross Muir	13	Workshop
9/18	Elderhostel PIB V / Put-in-Bay, OH Ed Islay	30	Workshop
9/19	Amherst Steel H.S. / Amherst, OH Darline Elsasser	53	Workshop
9/19-20	Willis/Dempsey Middle School / Delaware, OH Teresa Bettac	35	Workshop
9/20	Portage School / Gypsum, OH Greg Twarek	56	Workshop

**Stone Laboratory Workshops, Conferences and Tours
2000**

Date	Group Name/City/Leader	No.	Description
9/21	St. Mary of the Falls / Olmsted Falls, OH Lois Gretzner	14	Workshop
9/21-22	Orange High School / Orange, OH Mrs. Schrader	12	Workshop
9/21-22	Edgewood School / Trenton, OH Dee Wells	19	Workshop
9/22	McCormick 5 th Grade / Huron, OH Elaine Bores	136	Tour
9/23	Girl Scout Troop 898 / Bay Village, OH Dana Hastings	14	Workshop
9/23	Heidelberg College / Tiffin, OH Dr. Ken Baker / Dr. Ken Kreiger	18	Workshop
9/24	Anderson Family	8	Lighthouse Tour
9/24	Marblehead Lighthouse Staff Debbie Hoffsinger	8	Lighthouse Tour
9/25	Elderhostel PIB VI / Put-in-Bay, OH Ed Isaly	30	Workshop
9/25	West Holmes High School / Millersburg, OH Doug Mohr	16	Workshop
9/26	Bataan Elementary / Port Clinton, OH Marty Willis	56	Workshop
9/26-27	Bellefontaine High School / Bellefontaine, OH Dennis Versele	7	Workshop
9/26-27	Program Review – National Sea Grant Program Assessment Team	29	Tour
9/27-29	The Wellington School / Columbus, OH Mike Smith	51	Workshop
9/29	Lakota Jr. High / Amsden, OH Tom Rymers	35	Workshop
9/29-30	Hilliard Darby / Hilliard, OH Kevin Dougherty	27	Workshop
10/2	Avon High School / Avon, OH Tess Wearsh	18	Workshop

**Stone Laboratory Workshops, Conferences and Tours
2000**

Date	Group Name/City/Leader	No.	Description
10/3	North Middle School / Lima, OH Cathy Boedicker	30	Workshop
10/4	Padua Franciscan H.S. / Parma, OH Terry Mansfield	29	Workshop
10/4-6	Columbus School for Girls / Columbus, OH Julie Biswas	64	Workshop
10/6	Laurel Elementary / Shaker Hts., OH Kay Ford	51	Workshop
10/9	Put-in-Bay / Put-in-Bay, OH Paul Genzman	33	Workshop
10/9-10	Worthingway Middle School / Worthington, OH Kevin Swabb	60	Workshop
10/10	Old Woman's Creek Advisory Council Gene Wright	10	Meeting
10/10-11	Hudson Middle School I / Hudson, OH Ken Radie	38	Workshop
10/11-12	Hudson Middle School II / Hudson, OH Ken Radie	39	Workshop
10/12-13	Robinson Jr. High / Toledo, OH Diane McClellan	27	Workshop
10/13	Masa Goto (Japan) / Hongzia Duan (China) Dr. Rosanne Fortner / Dr. Vic Mayers	4	Tour
10/13	Soloman Lutheran School Diane Habeger	23	Workshop
10/13-15	O.S.U. Plankton Class Dr. David A. Culver	15	Field Trip
10/14	Owens Community College / Toledo, OH Dave Gardener	7	Workshop
10/16	All Saints Catholic School / Rossford, OH Carol Gutierrez	22	Workshop
10/17	Assoc. of Science and Technology Centers Jennifer Radwan	12	Tour
10/17	Tiffin Junior High School / Tiffin, OH Danielle Blust	16	Workshop

**Stone Laboratory Workshops, Conferences and Tours
2000**

Date	Group Name/City/Leader	No.	Description
10/18	Auburn Career Centers / Concord, OH Sue Roseum	16	Workshop
10/19-20	Rocky River M.S. / Rocky River, OH David Opdyke	37	Workshop
10/20-22	Boy Scouts of America – Sea Scout Training Program Ray Derk	34	Conference
10/21	Ashland University Dr. Nigel Brush	16	Tour
10/23	Tom Higgins, Buffalo State College	1	Tour
10/23-24	Clintonville Academy / Columbus, OH Sally Lindsay	50	Workshop
10/26	Ford Middle School / Brookpark, OH Troy Trzebuckowski	30	Workshop
	TOTAL =	5660	

TABLE 5

**Stone Laboratory Scholarship Recipients
2000**

<i>Name</i>	<i>Institution</i>	<i>Name of Scholarship</i>
Axford, Timothy	Elyria High	Kelly Prochazka
Beever, Samantha*	Marshall University	Friends of Stone Lab
Blair, Ryan	Ashland High	Franz and Kate Stone
Blonski, Paul*	St Ignatius High	Friends of Stone Lab
Brutvan, Jodi	Ohio State Univ	Ray Frederick
Campbell, Kyle	Ohio State Univ	Oakland Park Conservation Club
Dangelo, Lacey	Southern Local Jr-Sr High	Ray Frederick
Dickmann, Brian	Ohio State Univ	Friends of Stone Lab
Digman, Daniel	Ohio State Univ	Franz and Kate Stone
Dobay, Roberta	Cuyahoga Community College	Ray Frederick
Emery, Hayden	Miami Univ	Ray Frederick
Fromme, Sarah	Ohio State Univ	Oakland Park Conservation Club
Furrow, Dona	Ohio State Univ	Friends of Stone Lab
Gallagher, Bridget	Magnificat High	Friends of Stone Lab
Greene, Gregory	Ohio State Univ	Oakland Park Conservation Club
Groomes, Megan	Elyria High	Kelly Prochazka
Hannibal, Roberta	Beaumont School High	Ray Frederick
Hardesty, Amanda	Fayetteville High	Ray Frederick
Heinen, Benjamin	Miami Univ	Pepsi-Cola Bottling Company
Herak, Patrick	Ohio State Univ	Oakland Park Conservation Club
Hobson, Sally	Ohio State Univ	Karen Jennings
Holton, Sarah	Bishop Watterson High	Friends of Stone Lab
Hoosein, Mehzabeen	Ohio State Univ	McDonald's
Hundley, Stacey	Ohio State Univ	Franz and Kate Stone
Iverson, Aaron*	Buckeye Valley High	Franz and Kate Stone & Friends of Stone Lab
Jadwisiak, Dinielle	Port Clinton High	Franz and Kate Stone
Jones, R Bryan	Ohio State Univ	Pepsi-Cola Bottling Company
Keiber, Amy	Ohio State Univ-Lima	Franz and Kate Stone
Kiehorth, Chelsey	Dublin Coffman High	Friends of Stone Lab
Kinnard, Courtney	Ohio State Univ-Newark	Franz and Kate Stone
Kohli, John	Geneva Area High	Ray Frederick
Landes, Christopher	Hilliard Darby High	Friends of Stone Lab
Landphair, Amy	Geneva Area High	Ray Frederick
Ledford-Jones, Catherine	Ohio State Univ	Pepsi-Cola Bottling Company
Lengieza, Katherine	Marion Catholic High	Friends of Stone Lab
McBeth, Sarah	Elgin High	Ray Frederick
McKinley, Alison	Hilliard Davidson High	Ray Frederick
Meyers, Stephanie	Ursuline Academy High	Ray Frederick
Moran, Christine	Grandview Heights High	Friends of Stone Lab
Neal, Sarah	Medina High	Friends of Stone Lab
Nine, Sarah	Firestone High	Friends of Stone Lab
Pekar, Erin	Ohio State Univ	Franz and Kate Stone
Penso, Jorge	Dublin Scioto High	Friends of Stone Lab
Pirkle, Christy	Ohio State Univ	Oakland Park Conservation Club
Roshon, Kelly	Westerville-South High	Friends of Stone Lab
Schultz, Kathryn	Wright State Univ	Ray Frederick
Skytta, Carla	Kent State Univ	Ray Frederick
Stahl-Compton, Stephanie	Ohio State Univ	Oakland Park Conservation Club
Sutphin, Zak	Miami Univ	Franz and Kate Stone
Sweeney, Shawn	Elyria Catholic High	Polish Fishermen's Club
Trzebuckowski, Tracey	Ohio State Univ	Franz and Kate Stone
Tucker, Abigail	Univ of Notre Dame	Ray Frederick
Ubbing, Kelly	Bowling Green State Univ	Franz and Kate Stone
Utrup, Nicholas	Ohio State Univ	Oakland Park Conservation Club
White, Stephen	Ohio Univ	Sandusky CB & Fairport Rod & Reel
Wilcox, Stephen	Miami Trace High	Friends of Stone Lab
Yurmanovich, Donald	Avon Lake High	Polish Fishermen's Club

*Scholarship recipient from Ohio Academy of Science State Science Day

TOTAL number of scholarships -- 57

TOTAL value of scholarships -- \$14,389

Name *Permanent City/State* *Rank* *Major* *College* *Institution*

TABLE 6

Stone Laboratory Student Roster -- 2000
(201 students)

<i>Name</i>	<i>Permanent City/State</i>	<i>Rank</i>	<i>Major</i>	<i>College</i>	<i>Institution</i>
Constance Adams	Columbus OH	Graduate Non-Degree	Wildlife Mgt	Graduate	The Ohio State University
Jonathan Allen	Columbus OH	Senior		Natural Resources	The Ohio State University
Timothy Axford	Elyria OH	High School Sophomore			Elyria HS
Lydia Bailey	Mechanicsburg OH	Senior	Real Estate & Urban Analysis	Fisher College of Business	The Ohio State University
Neal Banaszak	Parma OH	Senior	Fisheries Mgt	Natural Resources	The Ohio State University
Stephanie Bear	Hilliard OH	High School Senior			Hilliard Darby HS
Jennifer Bebout	Beavercreek OH	Senior	Biological Sciences	Coll of Science & Math	Wright State University
Samantha Beaver	Proctorville OH	Freshman	Biology	College of Science	Marshall University
Lisa Bircher	Columbiana OH	Graduate Non-Degree		Graduate	The Ohio State University
David Bishop	Mansfield OH	High School Sophomore			Madison HS
Melinda Bixel	Worthington OH	Graduate Non-Degree		Graduate	The Ohio State University
Mark Blackstone	Gahanna OH	High School Sophomore			St Charles Preparatory HS
Ryan Blair	Jeromesville OH	High School Senior			Ashland HS
Kevin Blake	Ottoville OH	Graduate Non-Degree	Education	Education	University of Toledo
Paul Blonski	Brecksville OH	High School Junior			St Ignatius HS
John Boggs	Columbus OH	Graduate Non-Degree		Graduate	The Ohio State University
Tiffany Booth	Thompson OH	High School Sophomore			Ledgemont HS
Kathleen Bradley	Berea OH	Junior	Biology-Ecology		Cuyahoga Community College
Marc Branham	Columbus OH	Ph.D.	Entomology	Graduate	The Ohio State University
Marsha Bratzel	Columbus OH	Junior	Zoology	Arts and Sciences	The Ohio State University
Lisa Brohl	Put-in-Bay OH	Master's	Environmental Science	Graduate	The Ohio State University
Daniel Brown	Ashland OH	High School Junior			Ashland HS
Jennifer Bruitvan	Norwood OH	Graduate Non-Degree		Graduate	The Ohio State University
Jodi Bruitvan	Cincinnati OH	Graduate Non-Degree	Education	Graduate	The Ohio State University
Shannon Byrne	Rocky River OH	High School Junior			Rocky River HS
Kyle Campbell	Westerville OH	Graduate Non-Degree	Ecology	Graduate	The Ohio State University
Ashley Carpenter	Berea OH	High School Junior			Berea HS
Abbie Childress	Cincinnati OH	High School Sophomore			Oak Hills HS
Daniel Claman	Columbus OH	High School Sophomore			Upper Arlington HS
Martin Collier	Lebanon OH	Master's	Science	Education	Wright State University
V Nicole Collis	Columbus OH	Senior	Finance, Acct, Econ Sp Mgt	Arts and Sciences	The Ohio State University

Table 6 cont'd

<i>Name</i>	<i>Permanent City/State</i>	<i>Rank</i>	<i>Major</i>	<i>College</i>	<i>Institution</i>
Joseph Conroy	North Ridgeville OH	Senior	EEOB/Biochemistry	Arts and Sciences	The Ohio State University
Kathleen Costello	Columbus OH	Graduate Non-Degree		Graduate	The Ohio State University
Sarah Crompton	Columbus OH	Master's+	Science	Graduate	The Ohio State University
Joseph Crowley	Hilliard OH	High School Junior			Hilliard Davidson HS
Anne Csjpke	Columbus OH	Senior	Environmental Science	Natural Resources	The Ohio State University
Kristina Cunningham	Croton OH	High School Junior			Northridge HS
Lacey Dangelo	Salineville OH	High School Sophomore			Southern Local Jr-Sr HS
Todd Deem	Toledo OH	Graduate Non-Degree			The Ohio State University
Julianne Dempsey	Worthington OH	Sophomore	Environmental Science	Graduate	The Ohio State University
Christine DePamphilis	Westlake OH	Sophomore	Biology	Continuing Education	The Ohio State University
Peter DeWitt	Columbus OH	High School Sophomore			Cleveland State University
Brian Dickmann	Galloway OH	Master's+	Science Edu	Graduate	St Charles Preparatory HS
Daniel Dignan	Delaware OH	Senior	Entomology	Arts and Sciences	The Ohio State University
Roberta Dobay	Burton OH	Junior	Environmental Field Technology	Arts and Sciences	The Ohio State University
Jillian Elder	Columbus OH	High School Sophomore			Cuyahoga Community College
Hayden Emery	Cincinnati OH	Junior	Zoology	Arts and Sciences	Grandview Heights HS
Joshua Flory	Columbus OH	Post-Graduate	Earth Sci Edu	Continuing Education	Miami University
Andrea Fralick	Columbus OH	High School Sophomore			Ashland University
Sarah Fromme	Loudonville OH	Senior	Envir Edu & Interp	Natural Resources	Beechcroft HS
Dona Furrow	Jackson Center OH	Master's			The Ohio State University
Bridget Gallagher	Rocky River OH	High School Sophomore			The Ohio State University
Paul Genzman	Put-in-Bay OH	Master's			Magnificat HS
Robert Getz	Perrysburg OH	Senior	Biology & Education	Graduate	The Ohio State University
Paige Gipson	Cincinnati OH	Graduate Non-Degree			The Ohio State University
Gregory Greene	Columbus OH	Junior			Bowling Green State University
Megan Groomes	Elyria OH	High School Sophomore			The Ohio State University
Richard Gulvas	Toledo OH	Sophomore			The Ohio State University
Stacy Haberkorn	North Royalton OH	Senior	Fisheries Mgt	Food, Ag, and Env Sci	The Ohio State University
Roberta Hannibal	Cleveland OH	High School Senior			Elyria HS
Jane Hansley	Hamilton OH	Graduate Non-Degree	Undecided	Natural Resources	The Ohio State University
Amanda Hardesty	Fayetteville OH	High School Sophomore	Wildlife Mgt	Natural Resources	The Ohio State University
Frances Harker	Wakeman OH	Graduate Non-Degree	Agricultural Edu	Graduate	Beaumont School HS
Ashley Harris	Rocky River OH	High School Junior			The Ohio State University
Breanna Harris	Tallmadge OH	High School Junior			Fayetteville HS
James Harris	Athens OH	Senior	Marine Biology	Arts and Sciences	The Ohio State University
Benjamin Heinen	Burnt Hills NY	Senior	Zoology	Arts and Sciences	Tallmadge HS
Patrick Herak	Columbus OH	Master's	Environmental Science	Graduate	Ohio University
Sally Hobson	Columbus OH	Master's+	Education	Graduate	Miami University
Sarah Holton	Powell OH	High School Sophomore			The Ohio State University
					Bishop Watterson HS

2000

Table 6 cont'd

2000

Name	Permanent City/State	Rank	Major	College	Institution
Mehzabeen Hoosein	Columbus OH	Master's	Wetland Ecology	Graduate	The Ohio State University
Katherine Hovsepian	Ashland OH	High School Junior			Ashland HS
Catherine Huchko	Wadsworth OH	Senior	Government	Graduate	U S Coast Guard Academy
Lisa Huelskamp	Columbus OH	Ph.D.	Human Dimensions	Graduate Education	The Ohio State University
Ron Humphrey	Beavercreek OH	Senior	Comp Sci Bio/Chem	Graduate	Bowling Green State University
Stacey Hundley	Fairborn OH	Ph.D.	Science Edu		The Ohio State University
Sunara Hung	Columbus OH	High School Sophomore			Briggs HS
Chad Hunt	Greenwich OH	Senior	Biology-Education		University of Findlay
Tracy Huziak	Columbus OH	Ph.D.	Science Edu	Graduate	The Ohio State University
Abdallah Ibrahim	Columbus OH	Ph.D.	Science Edu	Graduate	The Ohio State University
Aaron Iverson	Radnor OH	High School Junior			Buckeye Valley HS
Charmille Jackson	Cleveland OH	High School Junior			East Technical HS
Dinielle Jadwisiak	Port Clinton OH	High School Junior			Port Clinton HS
Scott Johnson	Columbus OH	High School Junior			Eastmoor HS
Lyndsey Jones	Westerville OH	Post-Graduate	Intregrated Sci	Continuing Education	The Ohio State University
R Bryan Jones	Franklin OH	Graduate Non-Degree		Graduate	The Ohio State University
Shelley Judge	Columbus OH	Ph.D.	Geological Sci	Graduate	The Ohio State University
Jason Jurey	Wadsworth OH	Sophomore	Wildlife Mgt	University College	The Ohio State University
Douglas Kane	Westlake OH	Master's	EEOB	Graduate	The Ohio State University
Pamela Katko	Columbus OH	Master's+	Elementary Education	Graduate	The Ohio State University
Amy Keiber	Lima OH	Senior	Elementary Education	Education	The Ohio State University-Lima
Brandi Kent	Columbus OH	High School Junior			Marion-Franklin HS
Julie Ketner	Granville OH	High School Junior			Granville HS
Keosammang Khim	Columbus OH	High School Junior			Briggs HS
Chelsey Kiehborth	Dublin OH	High School Sophomore			Dublin Coffman HS
Courtney Kinnard	Newark OH	High School Junior			The Ohio State University-Newark
Eric Kohagen	Columbus OH	Senior	Education	Education	The Ohio State University
John Kohli	Columbus OH	Senior	Biology	Biological Sciences	The Ohio State University
Jacob Laine	Cincinnati OH	High School Senior			Geneva Area HS
Craig Landefeld	Woodsfield OH	High School Junior			Finneytown HS
Mark Landefeld	Woodsfield OH	Sophomore	Engineering	Engineering	The Ohio State University
Christopher Landes	Hilliard OH	Master's	Agricultural Edu	Graduate	The Ohio State University
Amy Landphair	Geneva OH	High School Sophomore			Hilliard Darby HS
Erin Lawrence	Canal Fulton OH	High School Sophomore			Geneva Area HS
Catherine Ledford-Jones	Franklin OH	Senior	Biology	Arts and Sciences	Ohio Northern University
Hyonyong Lee	Columbus OH	Graduate Non-Degree	Sci & Earth Sys Edu	Graduate	The Ohio State University
Katherine Lengjeza	Marion OH	High School Junior			The Ohio State University
Nancy Leonard	Columbus OH	Post-Graduate			Marion Catholic HS
Benjamin Liston	Ashland OH	High School Junior			The Ohio State University
					Ashland HS

Table 6 cont'd

<i>Name</i>	<i>Permanent City/State</i>	<i>Rank</i>	<i>Major</i>	<i>College</i>	<i>Institution</i>	2000
Craig Lobdell	Columbus OH	Graduate Non-Degree		Graduate	The Ohio State University	
Brian Lord	Columbus OH	Graduate Non-Degree		Graduate	The Ohio State University	
Megan Malone	Columbus OH	Sophomore	Unknown	University College	The Ohio State University	
David Manzo	Wilmington OH	Master's	Geological Sci	Graduate	The Ohio State University	
Magda Margulies	Lakewood OH	High School Junior			Lakewood HS	
Monica Martin	Columbus OH	Graduate Non-Degree		Graduate	The Ohio State University	
Alexandra Marvar	Howard OH	High School Sophomore			Mount Vernon HS	
Matthew Maurer	Columbus OH	Ph.D.	Science Edu	Graduate	The Ohio State University	
Sarah McBeth	Marion OH	High School Senior			Elgin HS	
Sue McGrady	Marion OH	Graduate Non-Degree		Graduate	The Ohio State University	
Alison McKinley	Hilliard OH	High School Sophomore			Hilliard Davidson HS	
Autumn McPherson	Columbus OH	High School Junior			Whetstone HS	
Stephanie Meyers	Goshen OH	High School Junior			Ursuline Academy HS	
Scott Miehl	Columbus OH	Senior	Fisheries Mgt	Natural Resources	The Ohio State University	
Corin Moenter	Woodville OH	High School Junior			Woodmore HS	
Kimberly Moherman	Ashland OH	High School Senior			Ashland HS	
Christine Moran	Columbus OH	High School Sophomore			Grandview Heights HS	
Barbara Morrison	Columbus OH	Graduate Non-Degree		Graduate	The Ohio State University	
Sara Morrison	Columbus OH	High School Sophomore	Arts Edu		Fort Hayes Career Center Voc	
Erin Morrow	Columbus OH	High School Sophomore			Columbus Alternative HS	
Sarah Neal	Medina OH	High School Sophomore			Medina HS	
Heather Nees	Piqua OH	High School Sophomore			Piqua HS	
Erin Nenadal	Hudson OH	Sophomore	Integrated Science Education	College of Education	University of Findlay	
Jeffrey Neubig	Columbus OH	Ph.D.	EEOB	Graduate	The Ohio State University	
Sarah Nine	Akron OH	High School Senior			Firestone HS	
Georgia O'Hara	Columbus OH	Graduate Non-Degree	Bio Sci Edu	Graduate	The Ohio State University	
Michael Palmer	Liberty Ctr OH	Post-Graduate	Envir Biology/Computer Info		Heidelberg College	
Susan Parkins	Columbus OH	Post-Graduate	Environmental Studies		Ohio Northern University	
Roseann Pavlick	Worthington OH	Senior	Communication	Arts and Sciences	The Ohio State University	
Erin Pekar	Fostoria OH	Junior	Biology	Arts and Sciences	The Ohio State University	
Jeff Pelc	Ravenna OH	Senior	Wildlife Mgt	Natural Resources	The Ohio State University	
Jorge Penso	Dublin OH	High School Sophomore			Dublin Scioto HS	
Matthew Peterson	Perrysburg OH	Senior	Biology	Arts and Sciences	The Ohio State University	
Christy Pirkle	Columbus OH	Master's	Environmental Science	Graduate	The Ohio State University	
John Radich	Columbus OH	High School Sophomore			Hilliard Darby HS	
Juan Radillo	Columbus OH	Master's+	Wildlife Biology	Graduate	The Ohio State University	
Rebecca Raimonde	Reynoldsburg OH	Master's	Science Edu	Graduate	The Ohio State University	
William Rand	Cincinnati OH	Graduate Non-Degree	Science Edu	Continuing Education	University of Cincinnati	
Nathan Raubenolt	Ashland OH	High School Junior			Ashland HS	

Table 6 cont'd

Name	Permanent City/State	Rank	Major	College	Institution
Joseph Ream	Smithville OH	Junior	EEOB	Arts and Sciences	The Ohio State University
Floyd Reece	Blacklick OH	High School Sophomore			Columbus Academy HS
Jennifer Regelski	Columbus OH	Graduate Non-Degree		Graduate	The Ohio State University
Luciano Reyes	Columbus OH	High School Junior			Linden-Mckinley HS
Brandon Rine	West Lafayette OH	High School Sophomore			Ridgewood HS
Belinda Roberts	Findlay OH	Sophomore	Physician Assisting	Arts and Sciences	University of Findlay
Jason Robles	Norwalk OH	Senior	Education-Geology		Bowling Green State University
Melissa Rohal	Gahanna OH	High School Junior			Westerville-North HS
Kelly Roshon	Westerville OH	High School Junior			Westerville-South HS
Danielle Ross	Gahanna OH	Master's		Graduate	The Ohio State University
Brandon Ryan	Westerville OH	High School Sophomore			Westerville-South HS
Sarah Ryder	Cleveland OH	High School Junior			Westerville-South HS
Todd Saksa	Columbus OH	High School Junior			John Marshall HS
Kira Sandmann	Toledo OH	High School Junior			Centennial HS
Jennifer Scharnhorst	Columbus OH	High School Junior			Sylvania Southview HS
Lisa Schill	Columbus OH	High School Junior			Briggs HS
Ethan Schneider	London OH	Senior	Zoology & Botany		Miami University
Kathryn Schultz	Dayton OH	High School Junior			Northeastern HS
Jeff Schuster	Columbus OH	Master's	Science	College of Education	Wright State University
Gregory Shaffstall	Hilliard OH	Master's	Science Edu	Graduate	The Ohio State University
Monica Shroyer	Columbus OH	High School Sophomore			Hilliard Darby HS
Carla Skytta	Rock Creek OH	Junior	Biological Sciences	Arts and Sciences	Kent State University
Jeff Spoelstra	Columbus OH	Junior	Biology	Arts and Sciences	Kent State University
Stephanie Stahl-Compton	Columbus OH	Master's	EEOB	Graduate	Kent State University
Ashley Starks	Columbus OH	Master's+	MSaT/Biology	Graduate	The Ohio State University
Joseph Stinson	Perry OH	High School Sophomore	Biology		Eastmoor HS
Ryan Stokes	Columbus OH	Junior	Ecology	University College	Allegheny College
Amanda Stoner	Perrysburg OH	High School Junior			The Ohio State University
Zak Sutphin	Mason OH	Senior	Zoology		Notre Dame Academy HS
Shawn Sweeney	Elyria OH	High School Sophomore			Miami University
Gretchen Swift	Columbus OH	Graduate Non-Degree	Education	Graduate	Elyria Catholic HS
Elizabeth Swinehart	Columbus OH	Senior	Zoology	Arts and Sciences	The Ohio State University
Amy Taylor	Dublin OH	Senior	Marine Biology	Biological Sciences	The Ohio State University
Melissa Tolson	Toledo OH	Master's	Secondary Science	Education	University of Toledo
Tracey Trzebuckowski	Parma OH	Master's	Science Pre-Profsln (pre-med)	Graduate	The Ohio State University
Abigail Tucker	Upper Sandusky OH	Junior	Secondary Edu - Life Sci	Science	University of Notre Dame
Kelly Ubbing	Columbus OH	Sophomore			Bowling Green State University
Nicholas Utrup	Ottawa OH	Junior	EEOB	Arts and Sciences	The Ohio State University
Vikram Vaka	Columbus OH	High School Junior			Upper Arlington HS

2000

Table 6 cont'd

<i>Name</i>	<i>Permanent City/State</i>	<i>Rank</i>	<i>Major</i>	<i>College</i>	<i>Institution</i>
Dennis Versele, Jr	Bellefontaine OH	Graduate Non-Degree		Graduate	The Ohio State University
Amy Wappner	Mansfield OH	High School Junior			Lexington HS
Sarah Watkins	Germanatown OH	High School Junior			Valley View HS
Daniel Weber	N Bellmore NY	Senior	Wildlife Mgt	Natural Resources	The Ohio State University
Brian Weeks	Bexley OH	High School Sophomore			Bexley HS
Sara White	Columbus OH	Master's	Science Edu	Graduate	The Ohio State University
Stephen White	Lakewood OH	Junior	Magazine Journalism		Ohio University
Marcy Wieser	Chesterfield MO	Senior	Zoology	Arts and Sciences	The Ohio State University
Stephen Wilcox	Washington CH OH	High School Junior			Miami Trace HS
Linda Wolfson	South Bend IN	Post-Graduate		Continuing Education	The Ohio State University
Amanda Woodruff	Akron OH	Senior	Biology		Wittenberg University
Jill Workman	Columbus OH	Master's	Early/Middle Childhood	Graduate	The Ohio State University
Michelle Workman	Gahanna OH	Graduate Non-Degree		Graduate	The Ohio State University
Donald Yurmanovich	Avon Lake OH	High School Sophomore			Avon Lake HS

2000