

Stone Laboratory 2003

Program Review

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STONE LABORATORY PROGRAM REVIEW 2003

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23 September 2004

I am pleased to present you with this copy of the Stone Laboratory Program Review for 2003. Stone Laboratory, the oldest freshwater biological field station in the country and Ohio's Lake Erie Laboratory since 1895, continues to focus on research, education, and outreach and all components of The Ohio State University's academic plan. We also focus on the 3 E's—the environment, the economy, and education—and strive to make every program and project we undertake lead to an improvement in one of these three critical elements. Included in this report you will find reviews of our:

- Summer program of college courses including programs for teachers, graduate students, undergraduate students and superior high school students (since 1990 our students have come from 88 colleges and 312 high schools);
- Spring and fall workshop, field trip, and conference program for grades 4 through adults (over 150 groups and 5,700 participants annually);
- Research conducted at this laboratory (20-30 projects annually with over 75 participants);
- Support efforts by the Friends of Stone Laboratory (they awarded 41 scholarships totaling \$17,242 in 2003);
- Fundraising efforts with the creation of six new research/education/outreach/and development endowments;
- Strong support from the State Legislature and our Congressional Delegation (thank you Senator DeWine and NOAA for a \$350,000 equipment and facilities grant);
- Historical development of Stone Laboratory; and,
- Milestones in the history of Stone Laboratory dating back to 1895.

While 2003 was clearly a good year for the Laboratory and the Ohio Sea Grant College Program, there is still much room for improvement. We must all commit ourselves to work even harder in the future to raise funds to improve our facilities and equipment and support scholarships to allow more students to participate. Furthermore, the pressures Lake Erie is facing and will face in the future are unprecedented. We must greatly expand our research program to allow us to better understand and manage this wonderful resource, our Great Lake—Lake Erie!!

Sincerely,

Jeffrey M. Reutter, Ph.D.
Director

Received
National Sea Grant Library

APR 20 2005

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Stone Laboratory, Ohio's Lake Erie Laboratory Since 1895

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FRANZ THEODORE STONE LABORATORY

2003 PROGRAM REVIEW

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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 island campus of The Ohio State University. During the summer of 2003, a total of 169 students from 12 colleges and universities and 40 high schools took college courses at Stone Laboratory (Figures 1 and 3). While the majority of our students come from Ohio State University, since 1990, students from 88 colleges and universities and 312 high schools have taken college courses at Stone Laboratory, and since 2000, students from 43 colleges and universities and 126 high schools have taken courses there (Figure 2). Enrollment numbers for high school students, undergraduate students, and graduate students were all fair in 2003, but the combined total was about 10% less than 2002 (Figures 1 and 4). The number of credit hours taken (698) was the lowest since 1989 and remedying this decline will be a major focus of our effort in the future (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 course offerings have met with mixed success. In 2003, a total of 21 courses were offered successfully. These included a new one-week course ("Individual Study in Herpetology") that had nine students. Three courses that had been offered in the past were cancelled due to low enrollment. Two of them were one-week courses for educators ("Insect Biology for Teachers" and "Global Change Education") and the third was a one-week upper-level course ("Ecology and Management of Wetland Birds").

Supporting Diversity. 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. Four students from the Young Scholars Program enrolled in 2001, one during 2002, and nine in 2003, while the Columbus

Public Schools I Know I Can program supported 14 students in 2001, nine in 2002, and 11 in 2003.

Workshops, Conferences and Field Trips. During the spring and fall, we offer a workshop/conference/tour program for students from grade 4 through adult. This program set new records for the number of groups and the total number of participants each year from 1997-2000 (Figures 7 and 8). Despite the events of 11 September 2001 and a very sluggish economy, 2001 was an excellent year producing the third highest number of groups and participants—162 groups and 5,288 participants. In 2002, our number of groups fell to 153, but we set a new record with 5,755 participants. In 2002 we also set a record for the number of student participants in the workshop program—3,755. While the majority of these students were in the influential middle school years (2,048), we also set a record for high school participants in 2002—975. In 2003 we set a new record for the number of groups with 177 with 5,709 participants (Figure 9).

Research. During 2002, 23 investigators and 53 students and technicians from 15 agencies and universities worked on 22 research projects at Stone Laboratory. During 2003, 27 investigators and 46 students and technicians from 17 agencies and institutions worked on 25 projects at Stone Laboratory (Figure 10). During 2002-2003 Ohio Sea Grant supported 40 large, competitively funded projects, including 22 new projects. We also supported 24 development fund projects, including 19 new projects. These investigators came from 10 universities. During 2002-2003 Sea Grant scientists produced 64 publications and made 159 scientific presentations, and supported 41 students on their projects.

Scholarships. Last year was a great year for scholarships at Stone Laboratory. With the assistance of the Friends of Stone Laboratory (FOSL) we were able to award 41 scholarships totaling \$17,264 in 2003, just \$472 below our record scholarship total of \$17,736 set in 2002 (Figures 11 and 12). The FOSL also awarded six scholarships to outstanding high school students at State Science Day sponsored by the Ohio Academy of Science. However, we are still able to provide scholarships to only about 25% of the students attending Stone Laboratory and cover only about 25% of the cost for those students.

Endowments. Clearly 2003 was a banner year for our fundraising efforts with the creation of six new research/education/outreach/and development endowments. Two new research endowments (Franz and Kate Stone Fund and John L. Crites Fund) totaling approximately \$425,000 were created; two scholarship endowments (Kelly Prochazka and Spark Baumler Memorial Endowments) totaling \$50,000 were created; an education, outreach and development endowment (John H. Dunlap, Jr. Fund) with a current total of just over \$50,000 and with a planned \$75,000 addition for 2004, was created; and a botany teaching endowment was created with a deferred gift of \$500,000 (Ronald L. and Darwin Stuckey Fund). Another scholarship endowment, the Sally and Jackson Smith Fund (\$25,000), will be completed in 2004.

Equipment and Facilities. While Stone Laboratory is the oldest freshwater biological field station in the country and has served as Ohio's Lake Erie laboratory since 1895, until 2002, we had never received federal funding to improve the Laboratory for the benefit of thousands of students and research scientists each year. Through the hard work and leadership of Senator Mike DeWine, Stone Laboratory received \$348,000 for equipment and facilities this year through NOAA. Most of

the new equipment items arrived in 2003—30 new microscopes, 3 new vans for students and researchers, a new research vessel, and much more. **Thank you Senator DeWine and NOAA!!** Ohio State University has also committed \$2.3 million and completed the planning and design phases for new water and sewer lines to the Stone Laboratory Research Building and then across the bay to Gibraltar Island. This work should be completed in 2005.

Web Site and Sea Grant's Electronic Reports. Our web site (www.sg.ohio-state.edu) was significantly improved in 2002 and 2003 to make it more useful to students, teachers, scientists, elected officials, and the general public, and to make it handicapped accessible. The site contains copies of *Twine Line*, many of our publications, information on courses and programs at Stone Laboratory, and summaries of all of our research projects. This site and our electronic reporting system for research projects were selected as “best management practices” by the National Sea Grant College Program. In 1999, the site had 258,165 hits. In 2000 it had over 571,756. In 2001 it had 988,631 hits, in 2002 it had 1,623,916 hits, and through the first nine months of 2003 it had approximately 1.2 million hits. In April 2001 Dr. Reutter made a presentation on the reporting system to the Sea Grant Association and offered the system to all Sea Grant programs. To date 20 programs have requested the system.

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 4 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 2003, adding to similar tables in reports produced in 2002, 2001, 2000, 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 4-12, 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 4 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. Thomas J. Rosol (Interim Vice President in 2003). 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.

In 2000 Dr. Reutter completed a 3-year term as the US Co-Chair of the IJC Council of Great Lakes Research Managers, where he has been a member since 1989 and will remain a member. In 2002, he was re-appointed by the Governor to a two-year term as one of Ohio's two representatives on the Board of Directors of the Great Lakes Protection Fund. In November 2002, he completed a 3-year term on the Executive Committee of the Board of Oceans and Atmospheres of NASULGC. In October 2001 he was elected President-Elect of the National Association of Marine Laboratories and became President in October 2003. In August 2002 and August 2003 he was asked to speak before a US Senate Committee on the Dead Zone in Lake Erie and in September 2002, he was asked to speak before the Ocean Commission on the Aquatic Nuisance Species problem. In 2003 he was named to the National GOOS Steering Committee, asked to Chair a Sea Grant Work Group on this same issue, and elected to the Board of Trustees of the Ohio Academy of Science.

II. OVERVIEW

EDUCATION

Courses for College Credit. Stone Laboratory began offering regular courses for college credit in 1900. 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. Both methods and subject matter courses meet Professional Development Standards established by the National Science Education Standards, and together they assist teachers in preparing their K-12 students for mandated state testing programs.

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 increased significantly in the 1990s. During the 1980s average annual enrollment was approximately 57 students. From 1991-2002, average annual enrollment jumped to over 200 students—an increase of over 350 percent (Figure 1). However, we are concerned that enrollment has fallen significantly since 2001 and are adjusting and increasing our marketing strategies. From 1990-2003, students from 44 Ohio colleges and universities, 44 out-of-state colleges and universities, and 312 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 4 to adult. For each grade level 4-12, the workshop is matched with Ohio Science Education Standards to enhance the classroom-based curriculum. These workshops range in duration from 1-3 days and generally include a science cruise on one of the Laboratory's research vessels, the *MV Bio-Lab* or the *MV Gibraltar III*. 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 5,700 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. The year of 2001 was very similar in numbers to 2000, with 22 projects, 20 investigators, and 57 students and technicians from 15 institutions, as was 2002 with 23 projects, 24 investigators, and 53 students and technicians from 16 institutions, and 2003 with 25 projects, 27 investigators, and 46 students and technicians from 17 institutions. 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 10 more. 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 that was accomplished in 2001.

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. THE LABORATORY IN 2003 AND RECENT YEARS

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. Bonita Cordi has been the Office Associate and Receptionist in Columbus since October 1999. Karen Ricker was our Communications Coordinator and the Assistant Director of Ohio Sea Grant from January 1998 to July 2003. Jill Jentes became our Communications Coordinator in July 2003. Prior to that date she had been the Editor of *Twine Line* beginning on 1 October 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 2003.

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, and Ohio Sea Grant's Education Coordinator, Dr. Rosanne Fortner, is also the Associate Director of Stone Laboratory. These arrangements guarantee maximum cooperation and collaboration between the programs, guarantee that the State of Ohio will receive the maximum benefit from the programs, and eliminate any opportunity for duplication of effort.

The Ohio Sea Grant College Program at The Ohio State University is one of 32 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 two exceptions, we offered two new one-week courses for teachers—“Ornithology for Teachers” and “Lake Erie Shipboard Research for Teachers” on USEPA’s 180-ft research vessel, the *Lake Guardian*. 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). New Courses offered in 2001 included “Ichthyoplankton Identification Workshop” (a one-day, one-hour course, EEOB 692), “Waterfowl Ecology” (a one-week course, Natural Resources 694), and “Stream Ecology for Teachers” (a one-week course offered at Old Woman Creek, EEOB 694). Three other new courses were attempted in 2001 but cancelled due to low enrollment: “Natural History of Ohio” (a term course, Natural Resources 510), “Outdoor Recreation Behavior” (a one-week course, Natural Resources 841), and “Watershed, Estuarine and Coastal Ecology” (a term course, Natural Resources and Civil Engineering 694). New courses offered in 2002 included, “Great Lakes Limnology,” a one-week course aboard USEPA’s 180-ft research vessel, the *Lake Guardian*, for teachers and graduate students; a term course, "Digital and Field Techniques for Coastal Environment Studies" (CE/NR 797), supported by the National Science Foundation's Division of Undergraduate Education; and a one-week educators course "Curriculum Development for Environmental Decision Making" (NR 694), supported by an Ohio Sea Grant's education project. Also new in 2002, the Thursday night lecture series was institutionalized with its own course number [NR 798] for both graduate and undergraduate credit. In 2003, “Individual Study in Herpetology” (EEOB 693, last offered in 1989 as “Herpetology” a regular, 5-credit-hour, term course), was successfully offered as a one-week, 3-credit-hour course. Currently about half of the faculty members come from Ohio State University and half come from other institutions.

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 1995-03. 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, now EEOB 110). Consequently, from 1998-03, five one-week introductory courses were offered, and, due to multiple offerings of Introductory Aquatic Biology, the Laboratory had a total of nine one-week introductory offerings from 1997-99 and eight from 2000-03.

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 this important audience. 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 (Geological Sciences 107), in 1993 Dr. Krissek, developed a 3-hour, 1-week Oceanography course for teachers (Geological Sciences 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" (Geological Sciences 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 well reviewed by students and has been offered annually since 1996, with the exception of 2000 and 2003 when it was cancelled due to low enrollment.

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 522) was offered successfully for the first time in 1999 and annually from 2000-03.

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 was repeated in 2002 and will be offered again whenever we can get participation from EPA.

In 2000 and 2001 Dr. Reutter worked with Dr. Joseph Holomuzki from the OSU Mansfield Campus and the staff at the Old Woman Creek NERR to develop a one-week course for teachers, "Stream Ecology for Teachers" (EEOB 694), that was taught successfully in 2001 and again in 2003. In 2002 Dr. Fortner worked with new faculty in environmental communications to teach "Curriculum Development for Environmental Decision Making" (NR 694). Projects developed by teachers in that course are now on an Internet site for use by others [<http://earthsys.ag.ohio-state.edu/decision/>].

In 2002 and 2003, Dr. David Johnson offered a new Natural Resources course for educators, "Aquatic Environmental Science for Teachers." In 2003, eight one-week courses for educators were offered and two were cancelled due to low enrollment.

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 Department of

Education, and Ohio State University Systems and Personnel. 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 annually from 1999-2003. 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 2003, Stone Laboratory continued its traditional schedule of Thursday evening guest lectures (Table 3). Each of the lectures was preceded by a research lecture in a series we call "Research Briefs." Thanks to a grant from USEPA to Drs. Fortner and Reutter, we were able to purchase video-conferencing equipment and each lecture was broadcast live to Kottman Hall on the Columbus campus. With support from the Friends of Stone Laboratory and the Office of Student Affairs, these lecturers are encouraged to spend additional time at the Laboratory and participate in some of the classes. Course credit is now available for student participants in the seminar series.

WORKSHOP PROGRAM

Stone Laboratory's custom designed Aquatic Science spring and fall workshop and field trip program for grades 4 through adults 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 (Figures 7-9). In 2001, we were on a record-setting pace when the events of 9/11/01 derailed the program for a time. However, it was still one of our best years with 162 groups and 5,288 participants (Table 4). In 2002, our number of groups fell to 153, but we set a new record with 5,755 participants. In 2002 we also set a record for the number of student participants in the workshop program—3,755. While the majority of these students were in the influential middle school years (2,048), we also set a record for high school participants in 2002—975. In 2003, we set a new record for the number of groups (177) with 5,709 participants (Figure 9).

SCHOLARSHIPS

In 2003, 41 Stone Laboratory students (new record) received scholarships valued at \$17,264 from the Friends of Stone Laboratory. Sixteen of the scholarship recipients were high school students and 25 were college students. From 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. In 2001, we awarded 32 scholarships totaling \$13,005. In 2002 we awarded 49 scholarships (32 to college students and 17 to high school students) with a total dollar value of \$17,736, a new record (Figures 11 and 12).

ENROLLMENT

During the 1980s enrollment at Stone Laboratory averaged 55-60 students per year. Enrollment 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, 201 in 2000, 185 in 2001, 199 in 2002, and 169 in 2003 (Figure 1 and Table 6). The 169 students that attended during the summer of 2003 came from 12 colleges and universities and 40 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). 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 other Ohio colleges and universities, out-of-state colleges, and Ohio State University (Figures 2 and 3). However, enrollment in recent years has fallen and this is a source of great concern.

As mentioned many times in this report, the academic program at Stone Laboratory focuses on science education for all ages – grade 4 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 and set a record in 2001 (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 stonework 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 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 upgraded to 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* and renamed it the *Gibraltar III*. 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 has greatly increased 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, faculty and staff office, research area and cottage. 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 2001, with assistance from the Office of Research, we purchased and successfully deployed a multi-probe sonde to study and monitor water quality in Lake Erie. In 2003 we purchased four more to begin a sophisticated research effort on the "Dead Zone" in the central basin of Lake Erie. This effort will get underway in 2004.

In 2001, Senator Mike DeWine was successful in placing \$350,000 in the NOAA budget for Stone Laboratory. These funds will be awarded in 2002 and have been used to purchase three 15-passenger vans, 30 microscopes, the *Lake Erie Monitor* (a 25-ft research boat), the construction of an educational Kiosk (to be completed in 2004), the final \$12,000 payment on the *Gibraltar III*, water

quality monitoring buoys for Lake Erie, and renovations at the Lighthouse and Cooke Castle.

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 process has been used annually ever since. In 2004, we will experiment with a 3-week second term.

We will continue to host groups of leaders and Great Lakes decision-makers and hope this program will grow when Cooke Castle is completed.

- In February 2002 and 2003 we hosted the fourth and fifth Sea Grant/Stone Laboratory Winter Lecture Series in Columbus. These programs focused on aquatic research conducted at the Columbus Zoo and Aquarium and sport fishing in Lake Erie.
- In May 2002, we hosted the Annual Meeting of the Great Lakes Aquatic Nuisance Species Panel at Stone Laboratory.
- In June 2002, we hosted the Nature Conservancy's Island Research Colloquium at Stone Laboratory.
- In July 2002, Ohio Sea Grant hosted its 14th State Legislature/Congressional Day on Lake Erie. The all-day event attracted elected officials and decision makers from over 25 offices. This was also the 20th anniversary of our first program in 1982 and the 25th anniversary of the Ohio Sea Grant College Program.
- In September 2002 the FOSL hosted the Fifth Annual Stone Laboratory Open House with Ohio Sea Grant and the Lake Erie Commission. Over 650 people attended the all-day event. The program was repeated in September 2003 with over 900 (new record) in attendance.
- In September 2002 we hosted the Annual Meeting of the International Association of Amusement Parks and Attractions at Stone Laboratory.
- On 14 August 2003, we co-hosted the second Put-in-Bay Legislative Day with Representative Chris Redfern and Senator Randy Gardner. Over 40 elected officials attended.
- In September 2003 we hosted a weekend training session for the Great Lakes Fisheries Leadership Institute.

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.

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.

A plan for the renovation of the Castle is developed and approved. The porches are replaced, drainage is repaired, and masonry joints are repointed completing the exterior renovation.

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 receives 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).

With the assistance of UNITS, Physical Facilities, Housing and Food Service, the University Office of Research, and the FOSL, 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.

The Office of Research at Ohio State donates \$50,000 to purchase equipment including: 14 new computers, a laptop computer and LCD projector, an electro-shocker, two hand-held GPS units, a GPS unit for the *Gibraltar III*, a water quality data recorder for our monitoring program, two new trawls, and more.

Housing and Food Service donates chairs for the Lecture Hall. The FOSL clean and transport them to the Laboratory.

Physical Facilities donates 39 new trees and shrubs. The FOSL plant them on Gibraltar Island.

The Council of Great Lakes Research Managers of the International Joint Commission meets at Stone Laboratory for the first time.

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

2001 In May the main office on campus moves to newly renovated space in The Ohio State University Research Center. The cost of renovation, \$585,000 was provided by Ohio State University.

In June 2001 Ohio Sea Grant and Stone Laboratory host the first Lake Erie Leadership Institute for Newly Elected Officials. Ten offices are represented.

In July 2001, Ohio Sea Grant and Stone Laboratory host a special Put-in-Bay Legislative Day developed by State Representative Chris Redfern with the village of Put-in-Bay and a number of other sponsors. Over 45 State Representatives and Senators attended. While Stone Laboratory is the oldest freshwater biological field station in the country and has served as Ohio’s Lake Erie laboratory since 1895, until this year, it had never received federal funding to improve the Laboratory for the benefit of thousands of students and research scientists each year. Through the hard work and leadership of Senator Mike DeWine, Stone Laboratory receives \$350,000 for equipment and facilities.

Friends of Stone Laboratory celebrate their 20th anniversary. The Friends are composed of former students and faculty and just “friends of Lake Erie” who banded together in 1981 to upgrade the Laboratory’s facilities and equipment, raise money for scholarships, bring in more outstanding faculty members, make it easier for non-OSU students to attend the Laboratory, and, in general, improve the quality of the research, education, and outreach programs conducted at Stone Laboratory. Annually, the group of about 500 members donates thousands dollars and person-hours to the Laboratory and Lake Erie. They have established 6 endowments and 4 general fund-raising accounts valued at more than \$600,000. In the last 10 years they have awarded 400 scholarships valued at approximately \$115,000 to students at colleges and universities all over Ohio, to help them attend Stone Laboratory. In 1996 the FOSL began awarding scholarships for outstanding science projects at the Ohio Academy of Science’s State Science Day. To date, they have honored and awarded scholarships to 34 high school students from all over Ohio and they have purchased over \$100,000 of equipment to support research and courses at Stone Laboratory.

The Stone Laboratory Brochure and Flier took first place in the brochures category during the publications competition at Sea Grant Week 2001.

Dr. Michael A. Hoggarth, Otterbein College, and Dr. David L. Moore, Utica College of Syracuse University, share the “Outstanding Visiting Professor Award.”

2002 The FOSL award 49 scholarships (32 to college students and 17 to high school students) with a total dollar value of \$17, 736, a new record.

We set a new record with 5,755 participants in the workshop program. In 2002 we also set a record for the number of student participants in the workshop program—3,755. While the majority of these students were in the influential middle school years (2,048), we also set a record for high school participants in 2002—975.

On 19 July 2002, Ohio Sea Grant and Stone Laboratory host their 14th State Legislature/Congressional Day on Lake Erie. The all-day event attracts elected officials and decision makers from over 25 offices. This is also the 20th anniversary of our first program in 1982 and the 25th anniversary of the Ohio Sea Grant College Program.

The University approves plans to bring village sewer and water from Put-in-Bay to the Research Building and then across to Gibraltar--\$2.7 million.

Dr. Michael A. Hoggarth, Otterbein College; Dr. C. Lavett Smith, American Museum of Natural History; and Dr. Carmen E. Trisler, Wittenberg University, share the “Outstanding Visiting Professor Award.”

The Friends of Stone Laboratory partner with the Young Buckeyes Club and the College of Biological Sciences Alumni Society to host the first “Buckeye Island Hop” at Stone Laboratory. Groups work at Stone Lab, the South Bass Island State Park, and the Island Historical Society.

The John L. Crites Research Endowment at Stone Laboratory is created with gifts from the sale of John Crites numbered prints of Stone Laboratory, the Research Building, and Cooke Castle.

The Franz T. Stone Research Endowment at Stone Laboratory is created with proceeds from the donation of two farms in the will of Kate Stone.

2003 The FOSL award 41 scholarships (25 to college students and 16 to high school students) with a total dollar value of \$17,264.

We set a new record with 177 groups (5,709) participants in the workshop program.

On 14 August 2003, we co-hosted the second Put-in-Bay Legislative Day with Representative Chris Redfern and Senator Randy Gardner. Over 40 elected officials attended.

Dr. R. Chris Stanton, Baldwin-Wallace College, and Dr. Carmen E. Trisler, Wittenberg University, share the “Outstanding Visiting Professor Award.”

The Friends of Stone Laboratory partner with the Young Buckeyes Club and the College of Biological Sciences Alumni Society to host the second “Buckeye Island Hop” at Stone Laboratory. Groups work at Stone Lab, the South Bass Island State Park, and the Island Historical Society.

The John H. Dunlap, Jr. Fund for Education, Outreach and Development at Stone Laboratory is created with gifts from Shirley and Cliff Bowser and the Kellogg Foundation.

The *Erie Monitor*, a 25-foot research boat, enters service at Stone Laboratory with assistance from Senator Mike DeWine.

With support from USEPA to Drs. Fortner and Reutter, the OSU UNITS program, and Ohio Sea Grant, equipment was purchased and the Laboratory conference room was renovated to allow distance-learning broadcasts. The summer Guest Lecture series and Research Briefs were broadcast to main campus and a fish dissection laboratory exercise was broadcast to Westerville North High School.

In July, Matt Thomas placed Stone Laboratory's first recording probe 7 miles north of Huron, Ohio, 0.3 m above the bottom, in the Sandusky sub-basin of the Central Basin of Lake Erie to study the Dead Zone.

On 1 September, the University Treasurer's Office placed the fair market value of two farms in Pickaway County (approximately \$390,000) into the Franz Stone Research Endowment.

Stone Laboratory 2003

Program Review Figures



FIGURE 1
Total Student Enrollment at Stone Laboratory
1980-2003

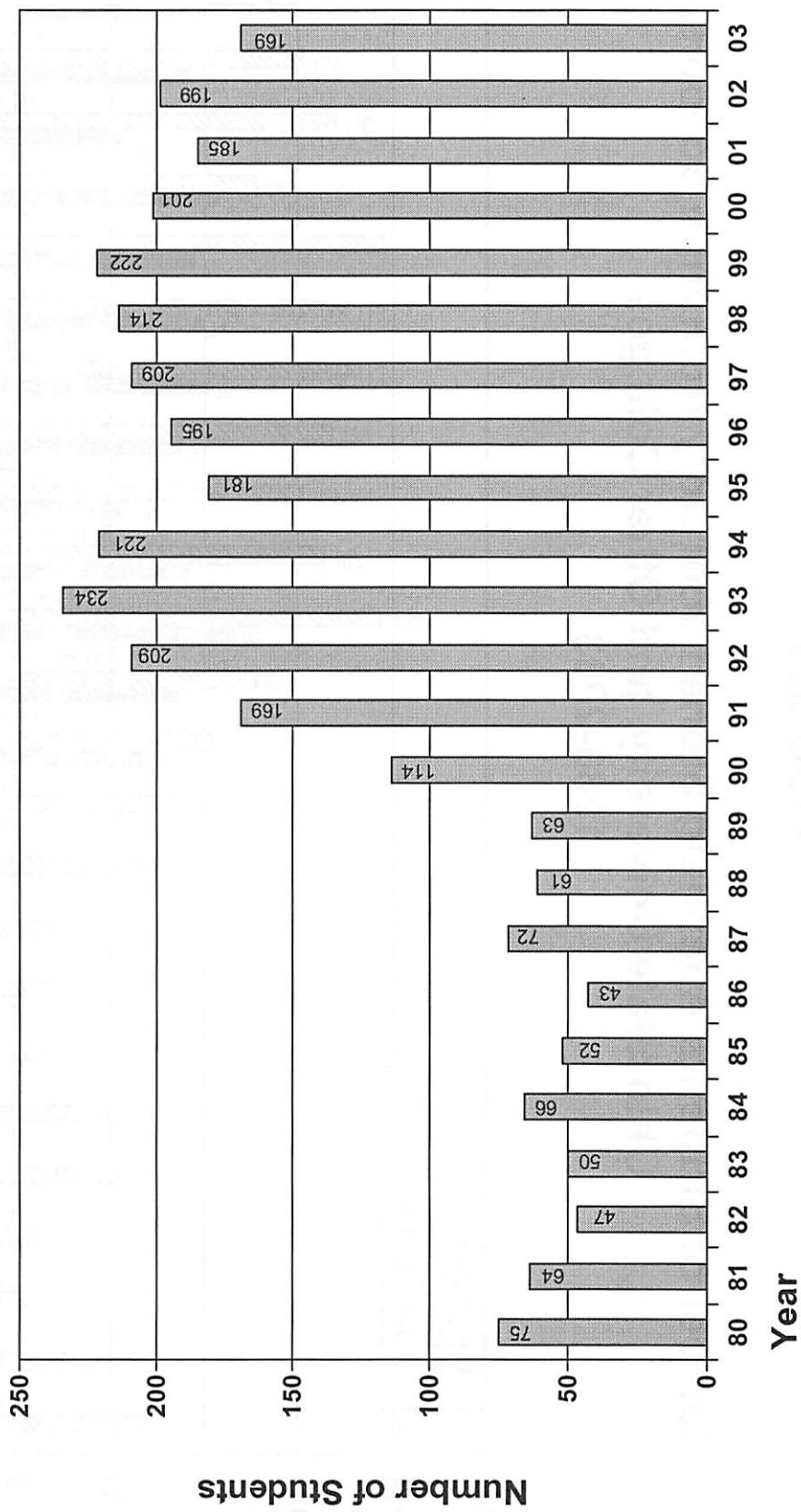
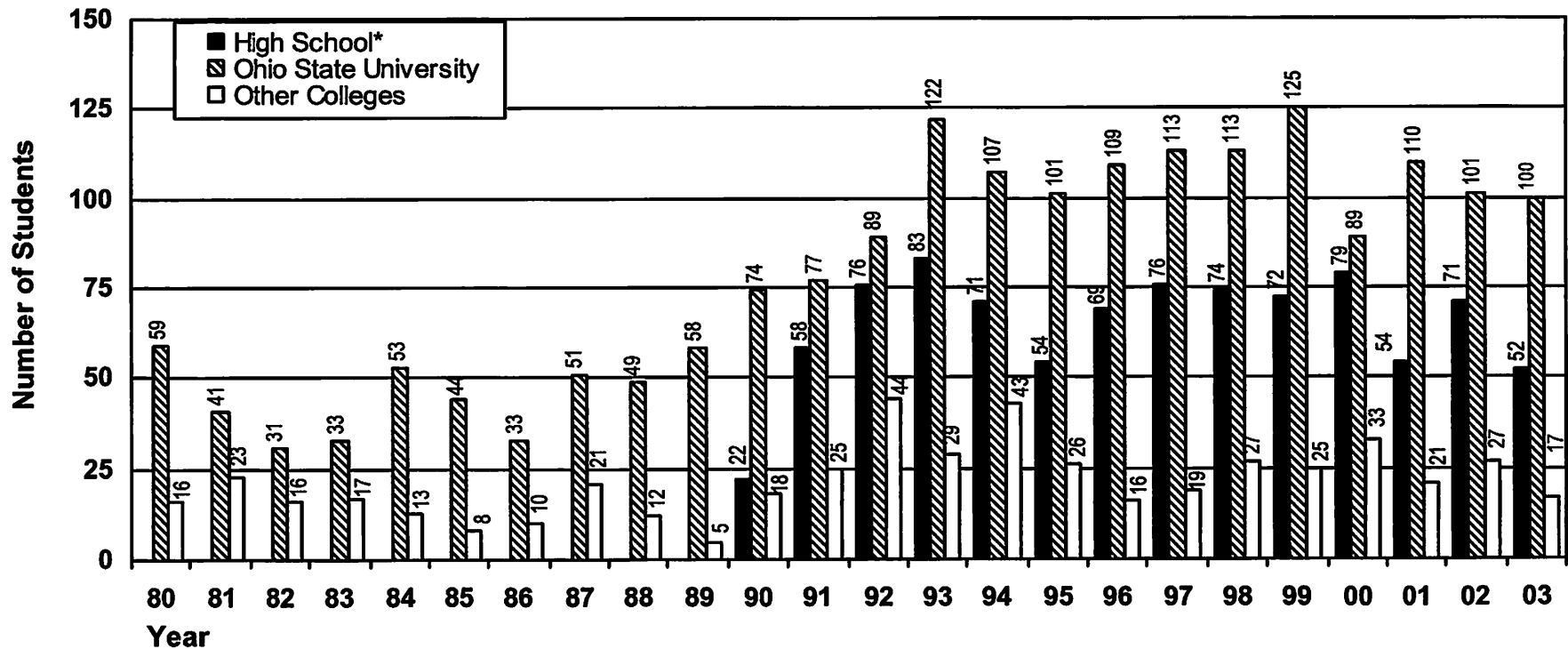


FIGURE 2

Number of Students Attending Stone Laboratory from High Schools, Ohio State University, and Other Colleges 1980-2003

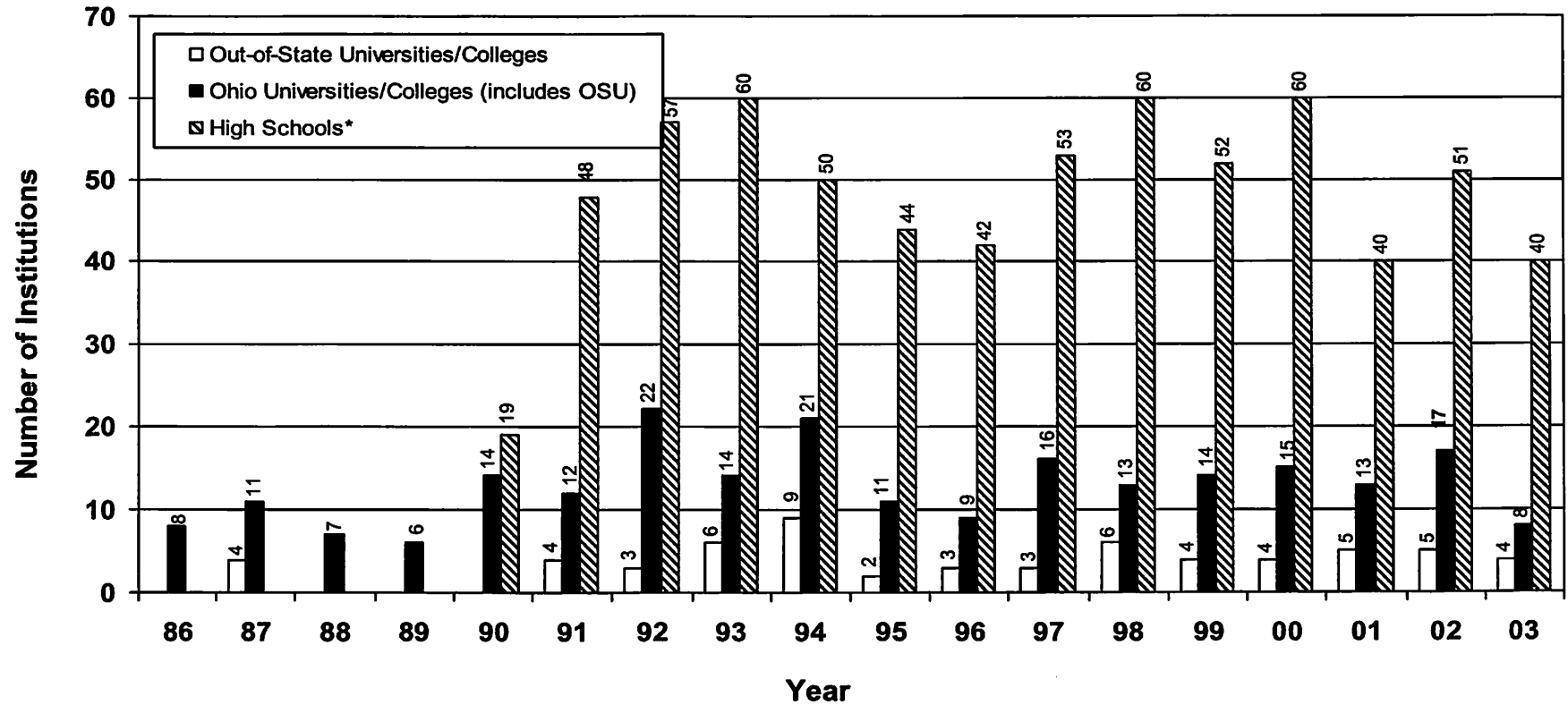


*Introductory courses for high school students began in the summer of 1990. These students enroll through Ohio State and receive undergraduate credit.

Note: Non-credit workshop participants reflected in totals.

FIGURE 3

**Number of Institutions Represented by Students at Stone Laboratory
1986-2003**

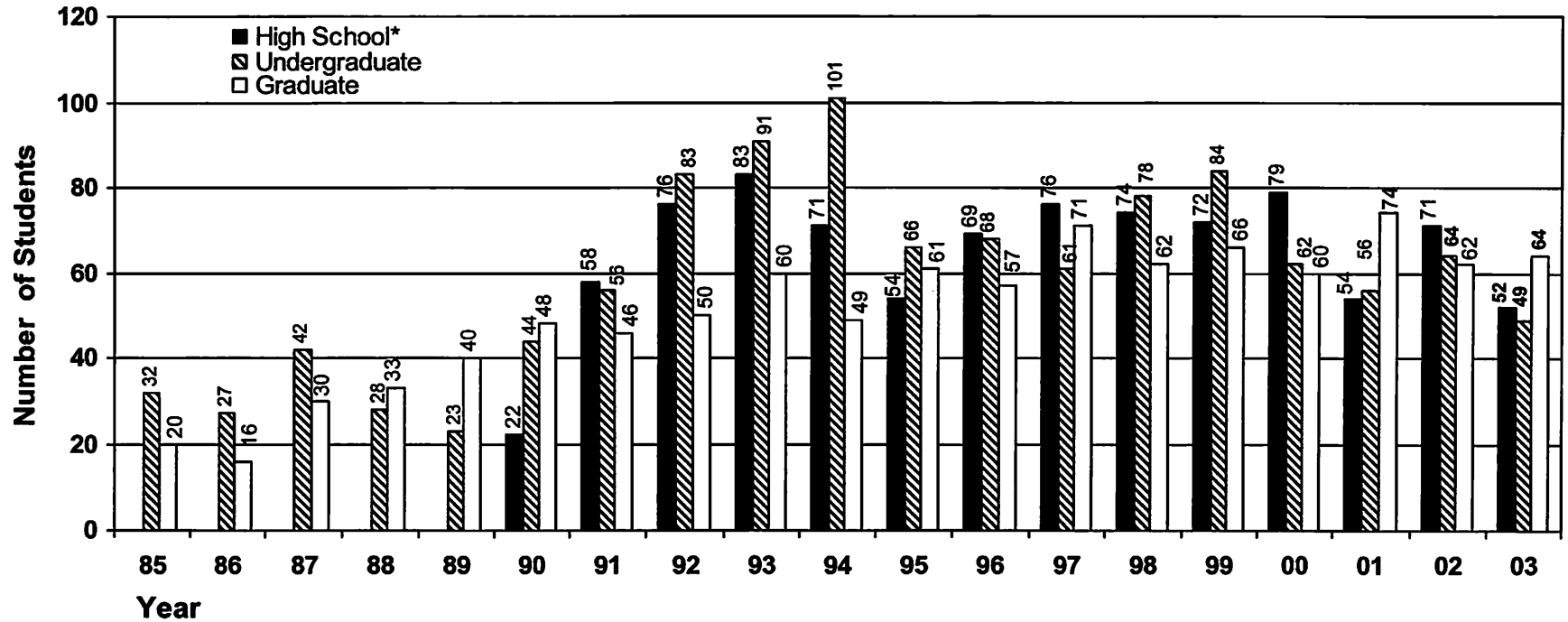


*Introductory courses for high school students began in the summer of 1990. These students enroll through Ohio State and receive undergraduate credit.

Note: Institution not counted if the only representative is a non-credit workshop participant.

FIGURE 4

**Number of Undergraduate, Graduate and High School Students
Attending Stone Laboratory
1985-2003**



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

Note: Non-credit workshop participants not included in totals.

FIGURE 5

**Credit Hours of Student Enrollment at Stone Laboratory
1987-2003**

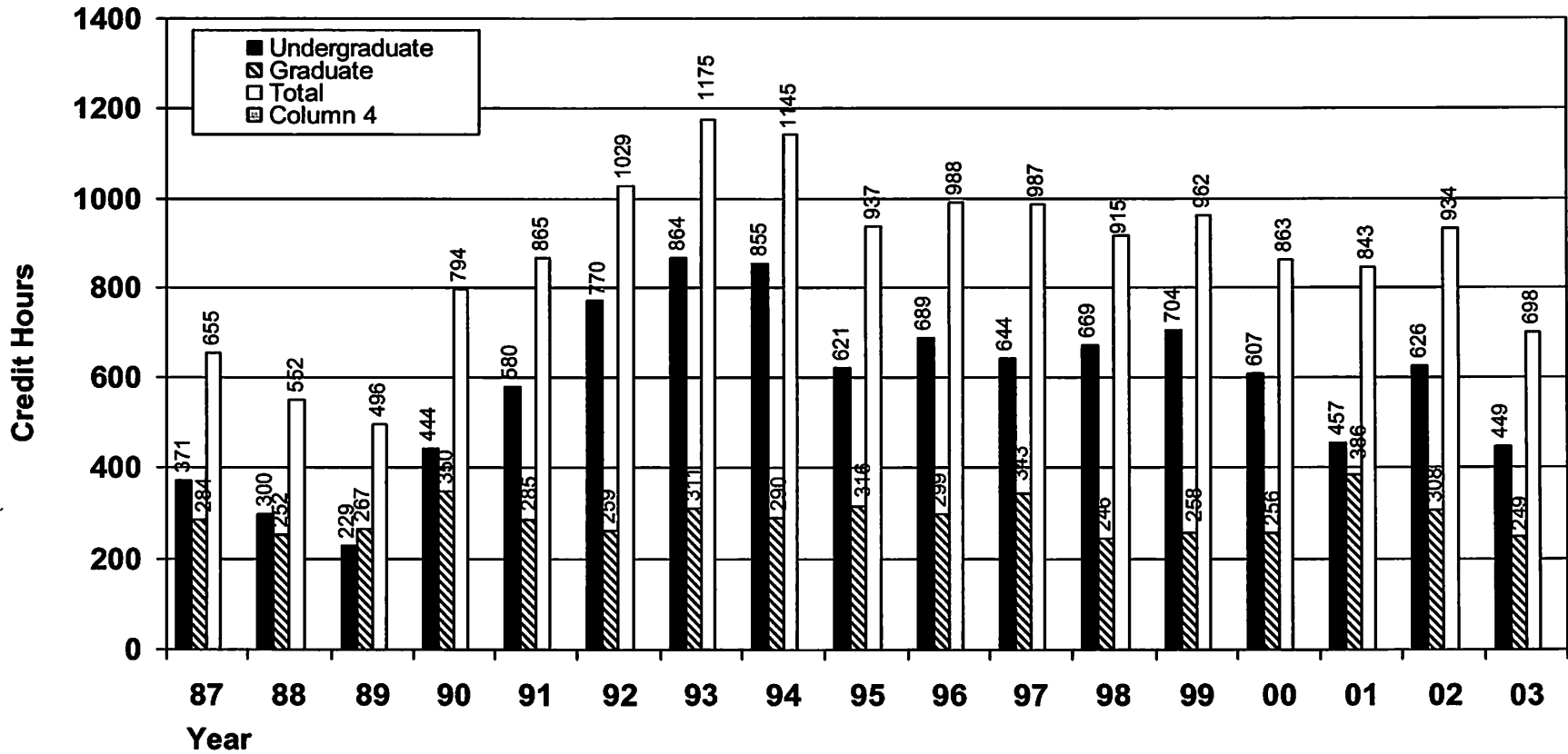


FIGURE 6

**Number of Male and Female Students Attending Stone Laboratory
1986-2003**

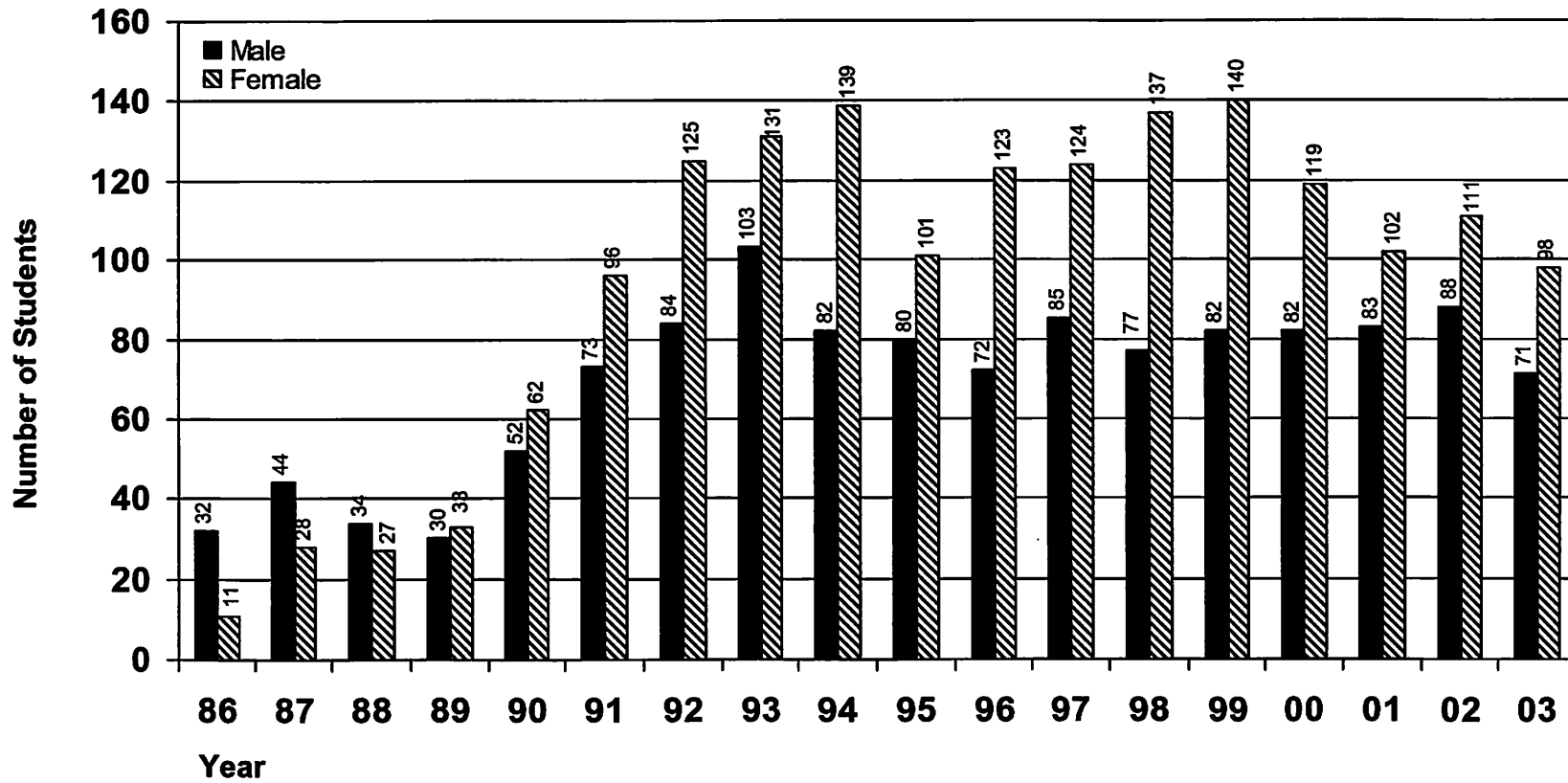


FIGURE 7

**Stone Laboratory Workshops, Conferences, and Tours: Number of Groups
1991-2003**

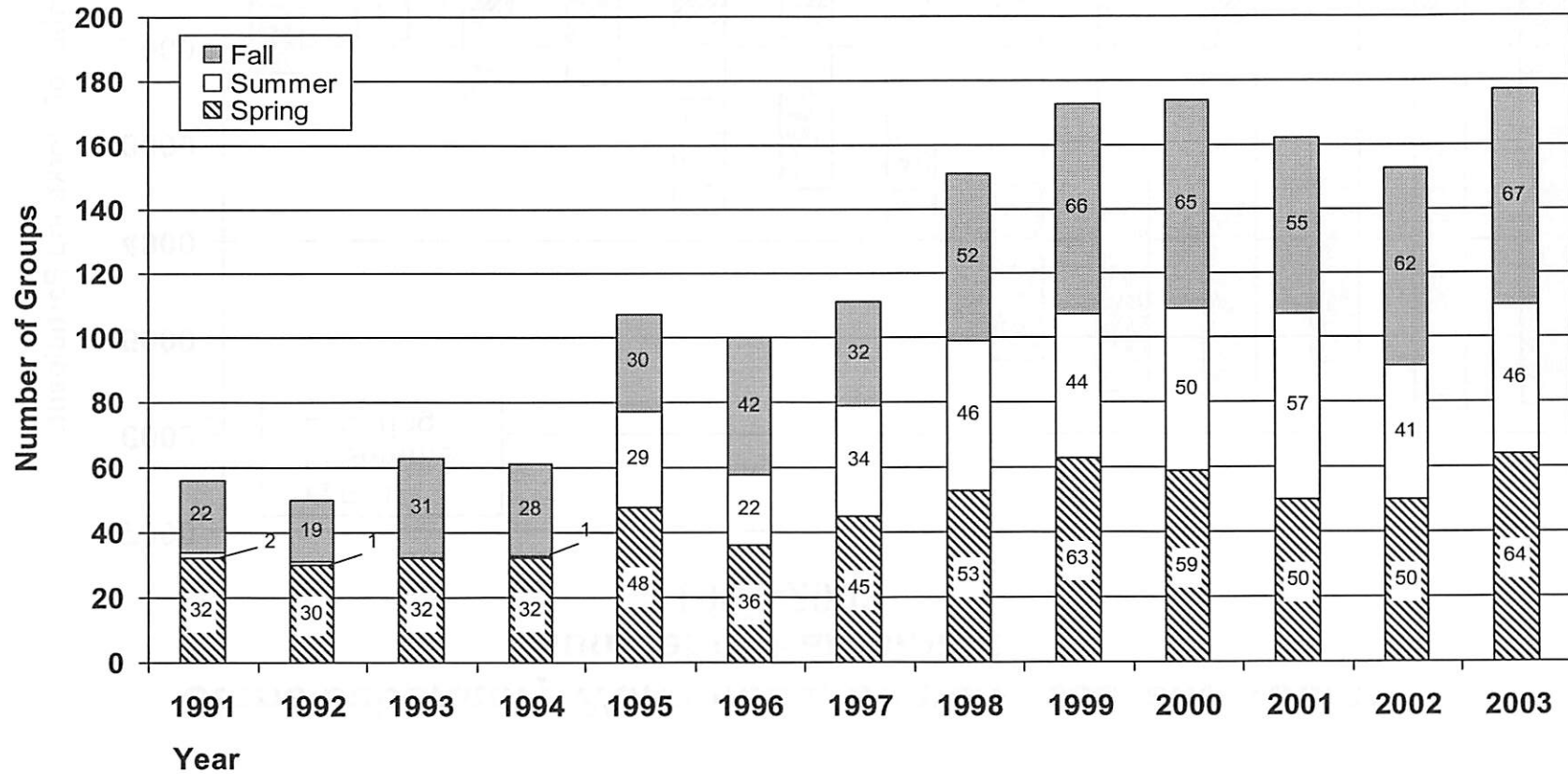


FIGURE 8

**Stone Laboratory Workshops, Conferences, and Tours:
Number of Participants
1991-2003**

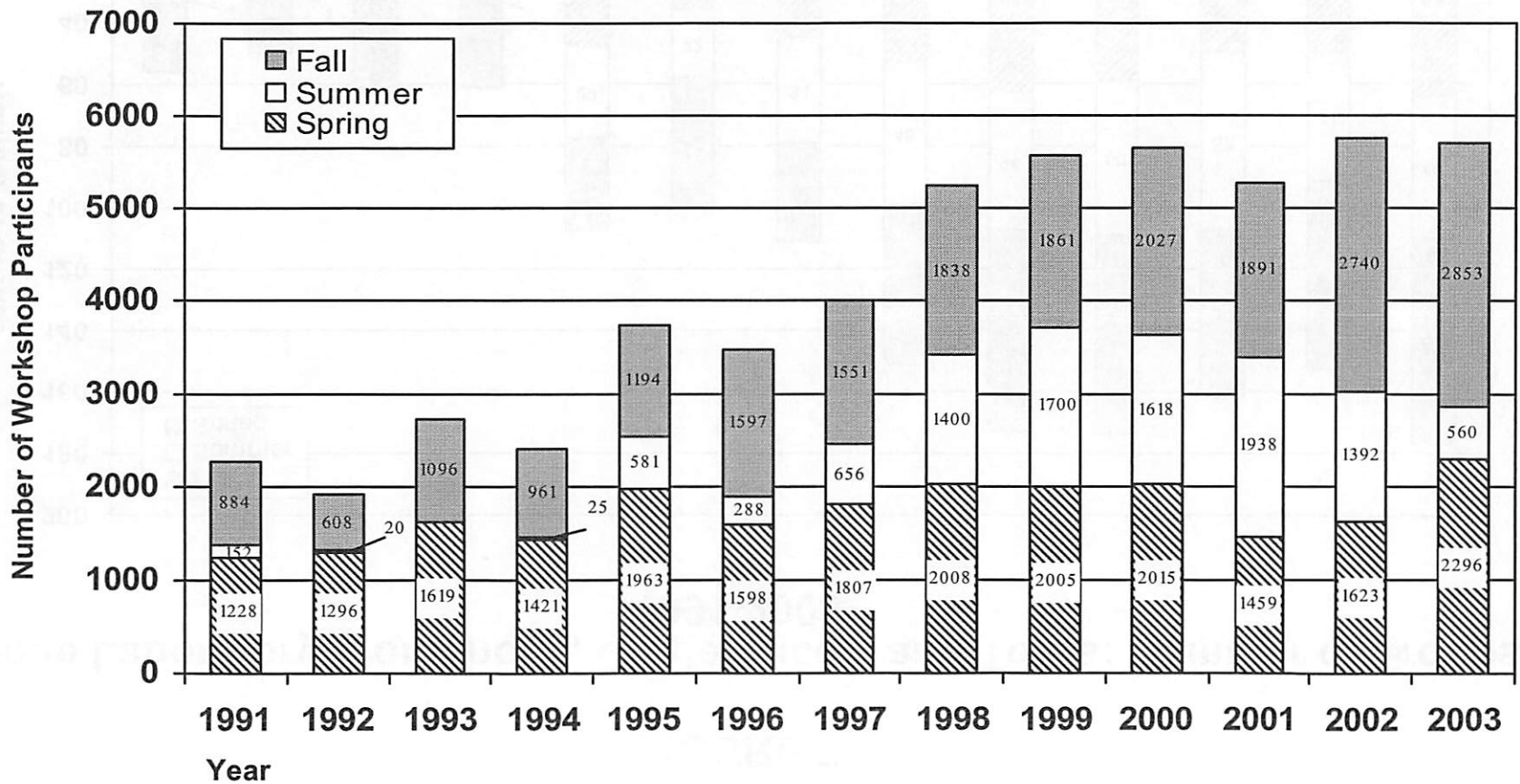
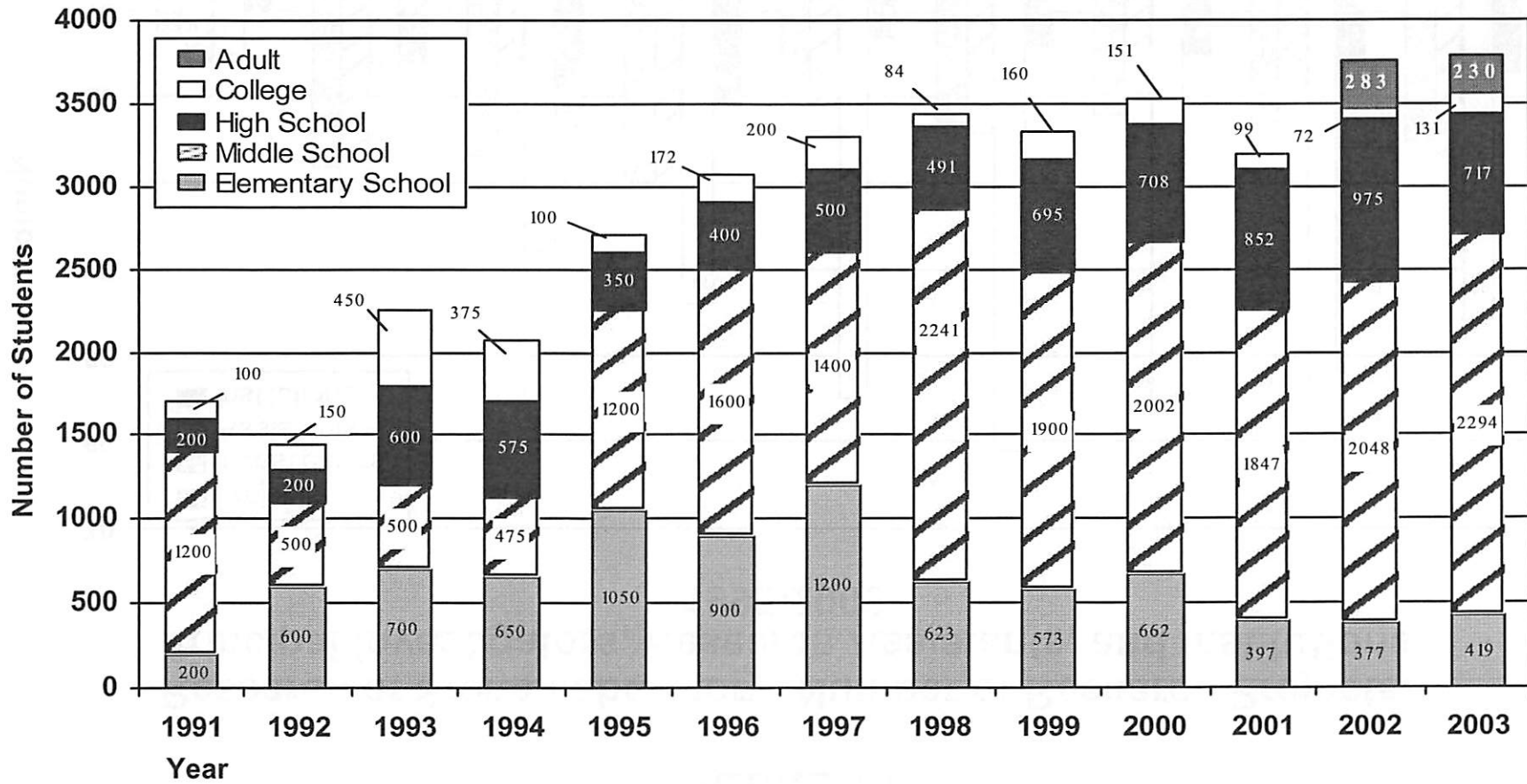


FIGURE 9

**Stone Laboratory Workshop Program: Composition of Participating Students*
1991-2003**



* Adult numbers included beginning in 2002

FIGURE 10

Research at Stone Laboratory: Number of Research Projects, Principal Investigators, Research Assistants, and Institutions 1995-2003

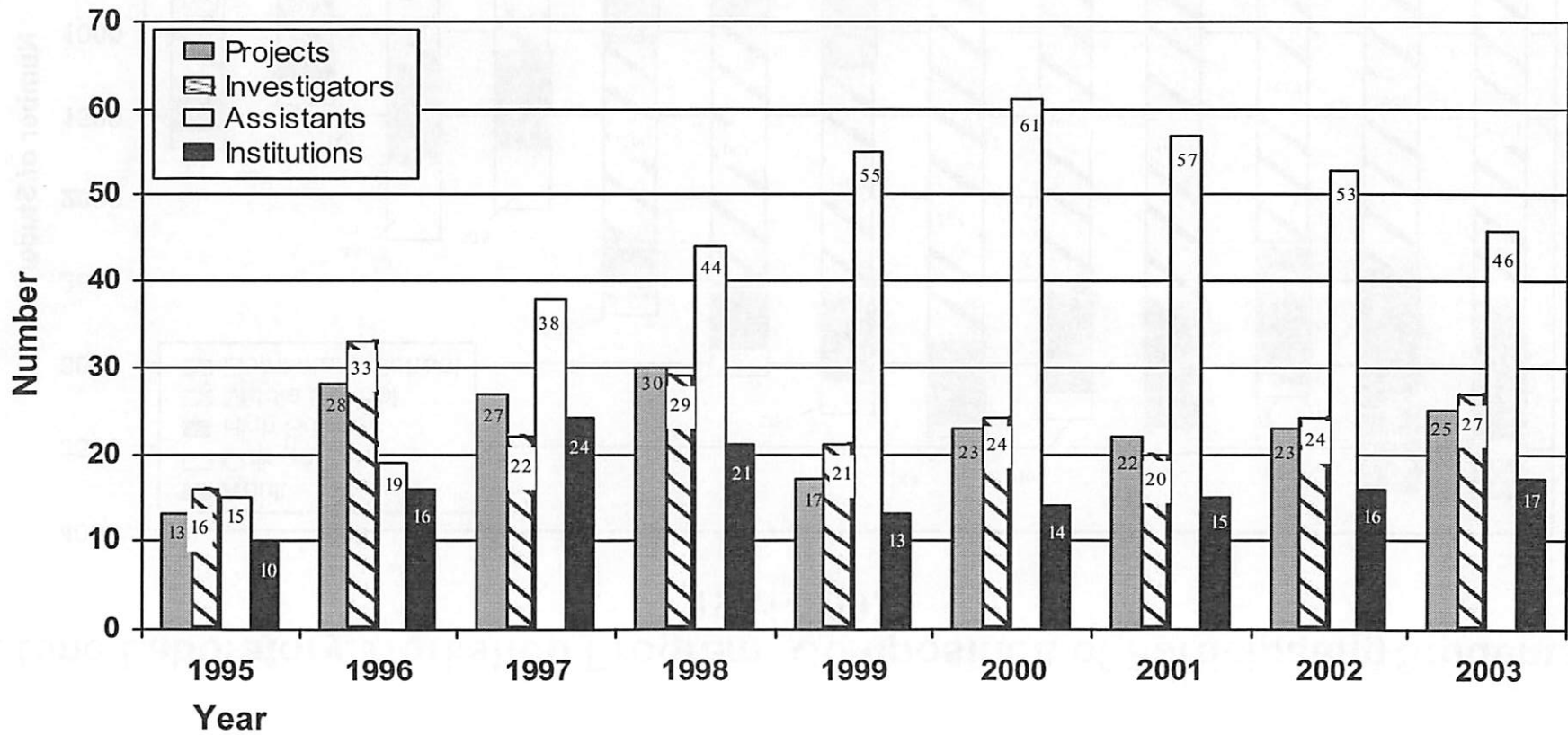


FIGURE 11

Number of Students Receiving Stone Laboratory Scholarships for Summer College Programs 1988-2003

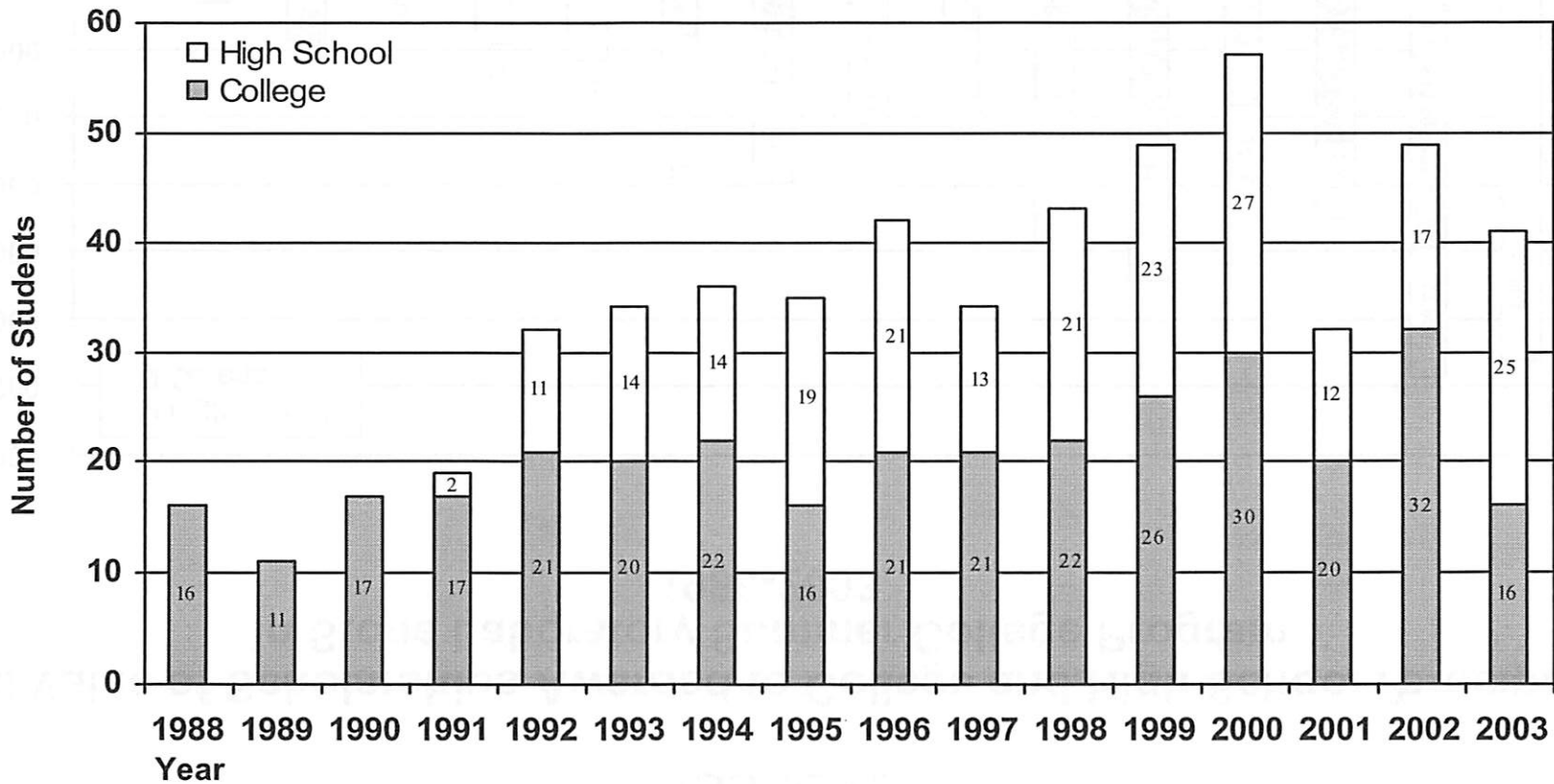
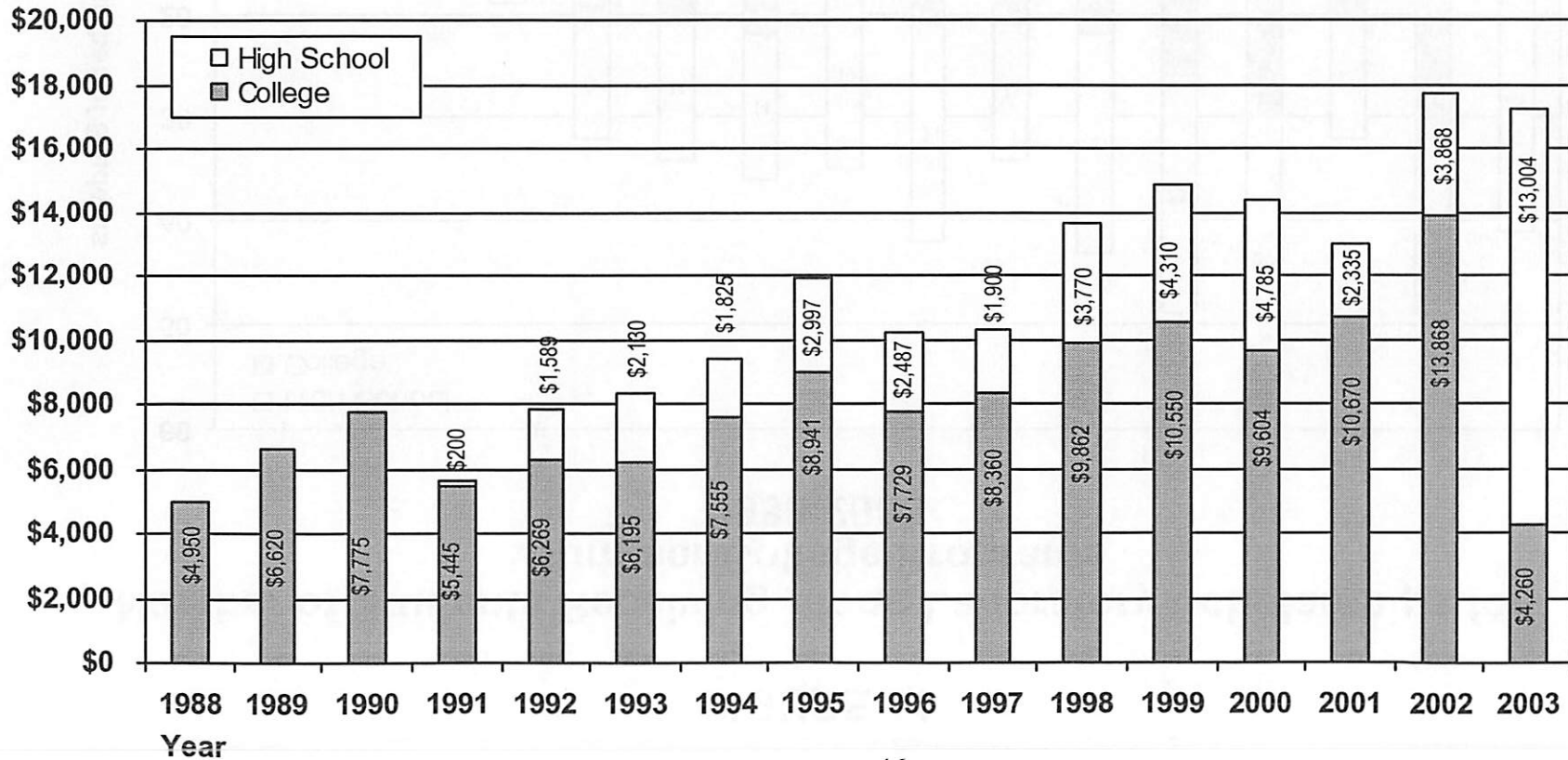


FIGURE 12

Total Value of Scholarships Awarded to College and High School Participants
in Stone Laboratory Summer College Program
1988-2003



Stone Laboratory 2003

Program Review Tables



TABLE 1

**Stone Laboratory Staff
2003**

Administration

Jeffrey M. Reutter	Director
Bonita C. Cordi	Office Associate
Kelly L. Dress	Laboratory Office Associate, Put-in-Bay
Rosanne W. Fortner	Associate Director
John R. Hageman	Laboratory Manager, Put-in-Bay
Jill Jentes Banicki	Communications Coordinator (beginning 9-1-03 as Acting; beginning 10-1-03 as Appointed)
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 (until 7-10-03)
Matt A. Thomas	Assistant Laboratory Manager, Put-in-Bay
John L. Tripp	Business Manager
Diane S. Whitbeck	Assistant Vice President, Student Affairs

Teaching Faculty

D. Derek Aday	EEOB 125- <i>Introductory Aquatic Biology</i>	Aug 17-Aug23
David J. Berg	EEOB 125- <i>Introductory Aquatic Biology</i>	Jul 27 - Aug 2
Thomas B. Bridgeman	EEOB 652- <i>Limnology</i>	Jun 22-Jul 23
John M. Condit	EEOB 522- <i>Ornithology for Teachers</i>	Jun 29 - Jul 5
Anne E. Dorrance	Pla Path 685- <i>Field Plant Pathology</i>	Aug 17-Aug 18
Rosanne W. Fortner	Nat. Res. 799- <i>Topics in Environmental Science and Engineering</i>	Jun 22-Aug 23
“	Nat. Res 611- <i>Great Lakes Education Workshop</i>	Jun 15-Jun 21
John E. Gannon	EEOB 653- <i>Fish Ecology</i>	Jul 24 - Aug 23
John R. Hageman	EEOB 692- <i>Ichthyoplankton Identification Workshop</i>	Jul 13
Michael A. Hoggarth	EEOB 651- <i>Field Zoology</i>	Jun 22- Jul 23
Joseph R. Holomuzki	EEOB 694- <i>Stream Ecology for Teachers (at OWC)</i>	Jul 13 - Jul19
David L. Johnson	EEOB 125- <i>Introductory Aquatic Biology</i>	Jun 8 - Jun 14
“	Nat. Res. 694- <i>Aquatic Environmental Science for Teachers</i>	Aug 3 - Aug 9
David J. Jude	EEOB 653- <i>Fish Ecology</i>	Jul 24 - Aug 23
Lawrence A. Krissek	Geological Sciences 107- <i>Field-Based Introduction to Oceanography</i>	Jun 15 - Jun 21
“	Geological Sciences 583- <i>Geologic Setting of Lake Erie</i>	Jul 19 - Jul 25
“	Geological Sciences 584- <i>Prin of Oceanography for Science Teachers</i>	Jun 22 - Jun 28
“	Geological Sciences 801- <i>Sem in Sedimentation & Sedimentary Rocks</i>	Jul 19 - Jul 25
Lisa Kutschbach-Brohl	EEOB 110- <i>Introduction to Local Flora</i>	Jul 13-Jul 19
Sally A. Miller	Pla Path 685- <i>Field Plant Pathology</i>	Aug 17-Aug 27
Jeffrey G. Miner	EEOB 652- <i>Limnology</i>	Jun 22- Jul 23
David L. Moore	EEOB 611- <i>Higher Aquatic Plants</i>	Jul 24 - Aug 23
Paul G. Rodewald	EEOB 126- <i>Introduction to the Study of Birds</i>	Jun 15-Jun 21
C.Lavett Smith	EEOB 621- <i>Ichthyology</i>	Jun 22 - Jul 23
Frederic L. Snyder	EEOB 125- <i>Introductory Aquatic Biology</i>	Aug 10 - Aug 16
Kristin M. Stanford	EEOB 693- <i>Individual Study in Herpetology</i>	Aug 10-Aug 16
R.Chris Stanton	Entomology 126- <i>Introductory Insect Biology</i>	Aug 3 - Aug 9
Carmen E. Trisler	Entomology 612- <i>Aquatic Entomology</i>	Jul 22 - Aug 23

Graduate Teaching Associates

John M. Brehm*	Ichthyology	t1
“	Fish Ecology	t2
Alycia Gabriel*	Introductory Aquatic Biology	w10
“	Ornithology for Teachers	w04
“	Great Lakes Education Workshop	w02
Robert A. Glatz* ¹	Ichthyoplankton Identification Workshop	Sunday
John J. Herbert	Introductory Insect Biology	w09
Katherine Johnson ¹	Field-Based Introduction to Oceanography	w07
“	Principles of Oceanography for Science Teachers	w03
Scott A. Kimball	Field Zoology	t1
Jeffrey R. Niehaus*	Aquatic Environmental Science for Teachers	w09
Kelly E. Riesen* ¹	Limnology	t1
LeAnn R. Southward	Introductory Aquatic Biology	w01
“	Introductory Aquatic Biology	w08
“	Introductory Aquatic Biology	w11
Carolyn Waggoner	Aquatic Entomology	t1

*non-graduate Ohio State University teaching associate

¹ also enrolled in Stone Laboratory core courses

Student Research Assistants (also enrolled in Stone Laboratory courses)
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Daniel Gillenwater	Research; t2 mwf	Crites Research Fellowship
Susan Joseph	Research; t1 mwf	Franz T. Stone Research Fellowship
Kristin Stanford	Research; t1 and t2	Crites Research Fellowship

Student Assistants

Alycia Gabriel ¹	Bookstore & Library Assistant; t1 and t2	
Robert A. Glatz	Laboratory; t1 mwf	
Joanna Grimes	Laboratory; t1 trs	
Norman Haley, III	Laboratory; t2 mwf	Charles Morin Fellowship
Lindsey Kubelka	Laboratory; t1 trs	
Kelly Riesen	Bookstore & Library Assistant; t1 and t2	
Ben Sylak	Laboratory; t1 mwf, t2 mwf	

¹non-Stone Lab student

Office, Technical, Physical Facilities, and Housing & Food Service Staff

Senthil Balasubramanian	Computer Technical Support, Columbus
Allen J. Duff	Boat Captain and Building Maintenance Superintendent, Physical Facilities, Put-in-Bay
Robin Glauser	Cook, Housing & Food Service, Put-in-Bay
Linda Gray	Housekeeping Manager, Housing & Food Service, Put-in-Bay
Cindy A. Hayter	Graphic Illustrator, Columbus
Paul Lipke-Benn	Office Assistant, Housing and Food Service, Put-in-Bay (until 10-11-03)
Jeffrey R. Niehaus	Courier, Put-in-Bay
Shanny O'Rourke-Scherf	Custodial Work Supervisor, Housing & Food Service, Put-in-Bay
Thomas Siwa, Jr.	Cook, Housing & Food Service, Put-in-Bay
Mark J. Wilhelm	Maintenance Repair Worker, Physical Facilities, Put-in-Bay
Art L. Wolf	Boat Captain and Plant Maintenance Engineer, Physical Facilities, Put-in-Bay

Workshop Assistants

	<u>Season of Employment</u>	
John Matt Brehm	spring	fall
Alycia M. Gabriel	spring	fall
Jeffrey R. Niehaus	spring	fall
Kelly Riesen	spring	fall

TABLE 2

**Stone Laboratory Curriculum
2003**

EEOB 110 • Introduction to Local Flora

Week 6, July 13-July 19 Lisa A. Kutschbach-Brohl, *U.S. Department of Agriculture*
An introduction to the identification and ecology of terrestrial and wetland vegetation.
3 undergraduate credit hours.

EEOB 125 • Introductory Aquatic Biology

Week 1, June 8-June 14..... Dr. David L. Johnson, *Ohio State University*
Week 8, July 27-August 2 Dr. David J. Berg, *Miami University*
Week 10, August 10-August 16 Frederic L. Snyder, *Ohio State University*
Week 11, August 17-August 23 Dr D. Derek Aday, *Ohio State University*
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 15-June 21 Drs. Paul G. and Amanda Rodewald, *Ohio State University*
An introduction to the study of birds including field techniques and identification.
3 undergraduate credit hours.

EEOB 522 • Ornithology for Teachers

Week 4, June 29-July 5 John M. Condit, *Ohio State University*
Field and laboratory studies of the visual and acoustical characteristics of common Ohio birds; discussion of world-wide birds and their classification; and identification of resource materials for classroom use.
3 undergraduate/graduate credit hours.

EEOB 611 • Higher Aquatic Plants

Term 2, July 24-August 23, MWF Dr. David L. Moore, *Utica College of Syracuse University*
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 22-July 23, MWF..... Dr. C. Lavett Smith, *American Museum of Natural History, New York*
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 22-July 23, TRS..... Dr. Michael A. Hoggarth, *Otterbein College*
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 652 • Limnology

Term 1, June 22-July 23, TRS..... Drs. Thomas B. Bridgeman, *University of Toledo*, and
Jeffrey G. Miner, *Bowling Green State University*
Study of the physical, geological, chemical, and biological factors influencing freshwater life; field and laboratory techniques for determining morphometry, chemistry, and biological productivity of lakes, streams, and wetlands are emphasized. 5 undergraduate/graduate credit hours.

EEOB 653 • Fish Ecology

Term 2, July 24-August 23, TRS..... Drs. John E. Gannon, *Intl. Joint Commission*, and
David J. Jude, *University of Michigan*
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 = Department of Evolution, Ecology, and Organismal Biology

Table 2 - cont'd

EEOB 692 • Ichthyoplankton Identification Workshop

One Day, Sunday, July 13, 10:00 a.m.-6:00 p.m. John R. Hageman and
Dr. Jeffrey M. Reutter (Instructor of Record), *Ohio State University*

This workshop will take students, agency professionals and other interested individuals through the techniques involved with the collection and identification of common larval fishes of the Lake Erie drainage basin. May be taken as a non-credit workshop for \$250. This course is graded satisfactory or unsatisfactory (S/U).

EEOB 693 • Individual Study in Herpetology

Week 10, August 10-August 16 Kristin M. Stanford, *Northern Illinois University*, and
Dr. Jeffery M Reutter (Instructor of Record), *Ohio State University*

NEW COURSE - Study of the distribution and the classification of reptiles and amphibians of Ohio, which includes methods of field research, species identification, collection, preservation and conservation. This course is graded satisfactory or unsatisfactory (S/U). 3 undergraduate/graduate credit hours.

Entomology 126 • Introductory Insect Biology

Week 9, August 3-August 9Dr. R. Chris Stanton, *Baldwin-Wallace College*
An introduction to the study of insects including biology, ecology, identification, and field techniques. 3 undergraduate credit hours.

Entomology 612 • Aquatic Entomology

Term 1, June 22-July 23, MWF.....Dr. Carmen E. Trisler, *Wittenberg University*
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

CANCELLED

Week 8, July 27-August 2Dr. David J. Horn, *Ohio State University*
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.

Geological Sciences 107 • Field-Based Introduction to Oceanography

Week 2, June 15-June 21Dr. Larry A. Krissek, *Ohio State University*
An introduction to the study of oceanography including field techniques. 3 undergraduate credit hours.

Geological Sciences 584 • Principles of Oceanography for Science Teachers

Week 3, June 22-June 28Dr. Larry A. Krissek, *Ohio State University*
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 611 • Great Lakes Education Workshop

Week 2, June 15-June 21 Dr. Rosanne W. Fortner, *Ohio State University*
Techniques and curricula for presenting interdisciplinary aspects of the oceans and Great Lakes in formal and non-formal education settings. 3 undergraduate/graduate credit hours.

Natural Resources 690 • Global Change Education

CANCELLED

Week 5, July 6-July 12 Dr. Diane H. Cantrell, *Ohio State University*
Materials and methods for presenting interdisciplinary aspects of global climate change and its impacts on global and regional settings. 3 undergraduate/graduate credit hours.

Natural Resources 694 • Ecology and Management of Wetland Birds **CANCELLED**
 Week 9, August 3-August 9Dr. Robert J. Gates, *Ohio State University*
 Ecology, life history, and management of waterfowl (Anseriformes and related species) from a wetland
 habitat perspective. Emphasis on North American populations and wetland habitats.
 3 undergraduate/graduate credit hours.

Natural Resources 694 • Aquatic Environmental Science for Teachers
 Week 9, August 3-August 9 Dr. David L. Johnson, *Ohio State University*
 Hands-on field and laboratory studies of coastal and lake environmental systems, including current science
 of physical and biological characteristics and processes, interactions of species,
 identification of organisms and conditions related to their survival. 3 undergraduate/graduate credit hours.

Natural Resources 799 • Current Topics in Environmental Science and Engineering
 Summer Quarter Dr. Rosanne W. Fortner, *Ohio State University*
 Seminar course that presents current research findings on environmental topics. Lectures on Tuesday
 and/or Thursday evenings throughout summer quarter. 1 undergraduate/graduate credit hour. This course is
 graded satisfactory or unsatisfactory (S/U).

Plant Pathology 658 • Field Plant Pathology
 Weeks 11 & 12, August 17-August 27Drs. Anne E. Dorrance and
 Sally A. Miller, *Ohio State University-Wooster*
NEW COURSE - Study of plant diseases in the field with emphasis on diagnosis and epidemiology;
 supplementary laboratory work. Cost for room and meals is \$508 for the dates August 17-27. Additional
 prerequisite: General plant pathology course. 3 undergraduate/graduate credit hours.

SPECIAL OFFERINGS:

EEOB 694 • Stream Ecology for Teachers
 Week 6, July 13-July 19 Dr. Joseph R. Holomuzki, *Ohio State University*
 This course introduces high school teachers to hydrology, stream organisms, field techniques and
 experimental design in ways that can be applied in the classroom and field. Course held at Old Woman
 Creek, Huron, Ohio. 3 undergraduate/graduate credit hours.

Geological Sciences 583 • Geologic Setting of Lake Erie
 Week 7, July 19-July 25Dr. Larry A. Krissek, *Ohio State University*
 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 \$450. Class will originate from and end at the Fawcett
 Center in Columbus, Ohio. 3 undergraduate/graduate credit hours.

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*
2003

All lectures begin at 7:45 PM and conclude at approximately 9:00 PM. An OSU boat leaves the dock in front of the OSU Research Building (near State Fish Hatchery) at 7:15 PM before each lecture. Transportation on this boat to and from Gibraltar Island is free.

Week 1	6/12	No Lecture
Week 2	6/19	Dr. Charles E. Herdendorf, Ohio State University "Discovery and Exploration of Shipwrecks: Case Studies of the Steamers Central America and Adventure"
<u>TERM 1</u>		
Week 3	6/26	Dr. Jane Forsythe, Bowling Green State University "The Geologic Setting of Lake Erie"
Week 4	7/3	Dr. David Rockwell, Great Lakes National Program Office, USEPA "Tracking Indicators of Lake Erie's Health 1983-2002"
Week 5	7/10	Dr. David A. Smith, President, Freshwater Farms of Ohio, Inc. "Aquaculture in Ohio"
Week 6	7/17	Dr. Gail Krantzberg, Director, Great Lakes Regional Office, IJC "The International Joint Commission and Current Challenges Facing the Great Lakes Basin Ecosystem"
Week 7	7/24	Transition between terms—No Lecture
<u>TERM 2</u>		
Week 8	7/31	Dr. David Horn, Ohio State University "Butterfly Biogeography on the Lake Erie Islands"
Week 9	8/7	Roger Knight, Ohio Division of Wildlife "Interagency Management of Walleye Fisheries in Lake Erie"
Week 10	8/14	John R. Kleberg, Asst. Vice Pres., Business/Finance, OSU (Retired) "Gibraltar and Jay Cooke"
Week 11	8/21	Finals Week—No Lecture
Week 14	9/6	Open House—11:30-4:00 Saturday—Open to Public Friends of Stone Laboratory Annual Meeting with Educational Programs and Tours of Gibraltar Island and South Bass Lighthouse

* Sponsored by the Friends of Stone Laboratory, the Ohio Sea Grant College Program, and the Office of Housing, Food Service and Event Centers.

TABLE 4

**Stone Laboratory Workshops, Conferences and Tours
2003**

	Date	Group Name/City/Leader	No.	Description
1.	4/2	Project Learning Tree, Pre Tour Bill Schultz	3	Tour
2.	4/10	Stone Lab Partners / Put-in-Bay, OH	18	Meeting
3.	4/12	College of Wooster / Wooster, OH Ericka Iyengar	18	Workshop
4.	4/14	Lake High School / Uniontown, OH Ken Wolfe	46	Workshop
5.	4/15-18	Ryan Stacstaedler/Tiffin, H.S.	1	Shadow
6.	4/16	Melanie Mark / Sandusky H.S.	1	Shadow
7.	4/16	South Amherst Middle School / South Amherst, OH Chuck Latto	34	Workshop
8.	4/23	Sewickley Academy / Sewickley, PA Lisa Heberling	62	Workshop
9.	4/23	Lakota Jr. High / Amsden, OH Tom Rymers	33	Workshop
10.	4/26-27	Friends of Stone Lab / Columbus, OH Bonita Cordi	16	Workshop
11.	4/28-29	Mills School 6 th Grade I / Sandusky, OH Cheryl Sextalla	45	Workshop
12.	4/29-30	Mills School 6 th Grade II / Sandusky, OH Cheryl Sextalla	43	Workshop
13.	4/30-5/1	Mills School 6 th Grade III / Sandusky, OH Cheryl Sextalla	50	Workshop
14.	5/1	Owens Community College / Toledo, OH Mark Durvage	17	Workshop
15.	5/1-2	Mills School 6 th Grade IV / Sandusky, OH Cheryl Sextalla	48	Workshop
16.	5/2	Kenwood Elementary, Bowling Green, OH Kent McClary	71	Workshop

Table 4 – cont'd

	Date	Group Name/City/Leader		No.	Description
17.	5/2-4	OSU Limnology Class / Columbus, OH Dr. David Culver		24	Workshop
18.	5/3	OSU Geology Class / Columbus, OH Dr. Larry Krissek		15	Workshop
19.	5/5	Meadowlawn School M.S. I / Perkins Twp., OH Dawn Zappa		55	Workshop
20.	5/5-6	Mills School 6 th Grade V / Sandusky, OH Cheryl Sextalla	5 of 6	44	Workshop
21.	5/6	Meadowlawn School M.S. II / Perkins Twp., OH Dawn Zappa	2 of 6	55	Workshop
22.	5/6-7	Mills School 6 th Grade VI / Sandusky, OH Cheryl Sextalla	6 of 6	47	Workshop
23.	5/7	Meadowlawn School M.S./ Perkins Twp., OH Dawn Zappa	3 of 6	55	Workshop
24.	5/8	Meadowlawn School M.S. / Perkins Twp., OH Dawn Zappa	4 of 6	55	Workshop
25.	5/8-9	West Carrollton M.S./ West Carrollton, OH Sue Baker		44	Workshop
26.	5/9	Mt. Gilead H.S. National Honor Society / Mt. Gilead, OH		10	Workshop
27.	5/10	Muskingum College / New Concord, OH		15	Tour
28.	5/12-13	Woodside Middle School / Ft. Wayne, IN Jeff Beck		29	Workshop
29.	5/13	Elderhostel Program PIB I / Put-in-Bay, OH Susie Cooper		21	Workshop
30.	5/13	Jerry Nowak Tours & Travel/ St. Clement School North Royalton, OH Michael Jannazo		66	Tour
31.	5/13-14	Worthington Christian H.S. / Worthington, OH Debra Walton		19	Workshop
32.	5/14	West Side Montessori / Toledo, OH David Lymanstall		50	Workshop
33.	5/14-17	Bloom Carrol, Liberty Union & Berne / Carroll, Ohio Diane Gabriel		52	Workshop
34.	5/16	OSU Lima, Reaching Out to Youth / Lima, OH Hope Raschke		27	Workshop

Table 4 – cont'd

	Date	Group Name/City/Leader	No.	Description
35.	5/16	State Rep. Chris Redfern / Legislative Visit Planning Meeting Chris Redfern	8	Conference
36.	5/17-18	OSU Residents Hall Leadership Retreat/ Columbus, OH Kathryn French	10	Conference
37.	5/19	All Saints Catholic Elementary School / Rossford, OH Carol Gutierrez	32	Workshop
38.	5/19-20	Perry/McCord Middle School / Worthington, OH Marty McTigue	68	Workshop
39.	5/20	Elderhostel Program PIB II / Put-in-Bay, OH Suzie Cooper	25	Workshop
40.	5/20-21	Horizon TPS / Devilbis / Toledo, OH Dinah Garrison	54	Workshop
41.	5/21	Oregon City 5 th Grade/ Oregon, OH Robin Sneed	22	Workshop
42.	5/21-22	Laurel Elementary / Shaker Hts., OH Abbie Bole	50	Workshop
43.	5/22	John Moses	3	Tour
44.	5/22-23	Englewood Elementary / Englewood, OH Sis Litvin	22	Workshop
45.	5/22-23	Erwine Middle School / Akron, OH Jim Trogdon	44	Workshop
46.	5/23	Barb Roth	8	Tour
47.	5/27	Immaculate Conception School / Bellevue, OH Darlene DeBlase	75	Workshop
48.	5/28	Whiteford M.S. / Ottawa Lake, MI Susan Bixler	66	Workshop
49.	5/28-29	Miamisburg City Schools / Miamisburg, OH Michelle Morrison	46	Workshop
50.	5/29	Springfield South / Springfield, OH Michael Willets	6	Workshop
51.	5/29-30	Jones Middle School / Hilliard, OH Kelly Gibson	36	Workshop
52.	5/30	Jones Jr. High / Toledo, OH Susan Kos-Mayesky	33	Workshop

Table 4 – cont'd

	Date	Group Name/City/Leader	No.	Description
53.	5/30	Lake High School / Millbury, OH Jessie Kubuske	19	Workshop
54.	5/30	Jerry Nowak Tour & Travel / Elyria Northwood / Elyria, OH Michael Jannazo	53	Tour
55.	5/30	Jay Payne	3	Tour
56.	5/30	Central State University / Wilburforce, OH Candace Lowell	20	Workshop
57.	5/30	Project Learning Tree/ Sue Wintering	99	Tour
58.	6/2	Grizzel Middle School / Dublin, OH Larry Hohman	82	Workshop
59.	6/3	Elderhostel Program PIB III / Put-in-Bay, OH Susie Cooper	19	Workshop
60.	6/3	Terra Community College / Fremont, OH Joan Gamble	48	Tour
61.	6/3-5	Buckeye Valley Middle School / Delaware, OH Amos Price	47	Workshop
62.	6/4	Lorain Co. Extension Office / Elyria, OH Dave Kelch	15	Workshop
63.	6/5	Pearl Road Elementary / Parma Hts., OH Jeanne D'Alessandro	55	Workshop
64.	6/6	Jerry Nowak Tour & Travel / Mt. Carmel / North Royalton, OH Michael Jannazo	39	Tour
65.	6/11	Kent State University / Kent, OH Dr. Bob Heath	7	Tour
66.	6/12	Girl Scout Troop 1225 / Columbus, OH	12	Tour
67.	6/13	OSU Watershed District Agents Planning Meeting	7	Workshop
68.	6/16	Dick Reinhohl	4	Tour
69.	6/18	Robert Imbur	6	Tour
70.	6/19	Visitors to See Guest Lecturere Dr. Charles E. Herdendorf "Shipwrecks"	7	Tour

Table 4 – cont'd

	Date	Group Name/City/Leader	No.	Description
71.	6/20	Young Scholars Program / Columbus, OH Linda Jones	2	Tour
72.	6/23	State Rep. Chris Redfern / Legislative Visit Planning Meeting Chris Redfern	8	Conference
73.	6/23	Petrasek Family	6	Tour
74.	6/24	Joan Marks / Bedford, OH	4	Tour
75.	6/25	Ohio Bicentennial Committee / Put-in-Bay, OH Amy Newell	8	Conference
76.	6/26	Ottawa National Wildlife Refuge / Oak Harbor, OH	15	Tour
77.	6/26	Visitors to See Guest Lecturer Dr. Jane Forsyth "What Rocks Reveal"	12	Tour
78.	6/27	OSU Wooster Police / Wooster, OH Craig Proper	1	Tour
79.	7/3	Visitors to See Guest Lecturer Dr. David Rockwell "Tracking Lake Erie's Health"	6	Tour
80.	7/7	Sally Miller / Sue Dorrance / Wooster Prepare for Plant Pathology Class	4	Tour
81.	7/8	B.G.S.U. Summer Institute I / Bowling Green, OH Brenda Joy	22	Workshop
82.	7/10	Visitors to see Guest Lecturer Dr. David Smith "Aquaculture in Ohio"	14	Tour
83.	7/12	Kent State University Geology Department / Kent, OH Frank Erickson	20	Tour
84.	7/12	Julie Sipe	5	Tour
85.	7/14-15	OSU Promotions / Columbus, OH Jay Couch	1	Tour
86.	7/15	B.G.S.U. Summer Institute II / Bowling Green, OH Brenda Joy	23	Workshop
87.	7/17	Cope Family	2	Tour
88.	7/17	Visitors to See Guest Lecturer Dr. Gail Krantzberg "Challenges Facing The Great Lakes Basin Ecosystem"	7	Tour

Table 4 – cont'd

	Date	Group Name/City/Leader	No.	Description
89.	7/24	Camp COSI / Toledo, Oh	15	Workshop
90.	7/25	George Wagner-	3	Tour
91.	7/25	Campbell Family / Put-in-Bay, OH	2	Tour
92.	7/31	Envirothon Students Donna Furrow	7	Tour
93.	7/31	Visitors to See Guest Lecturer Ian Adams "Ohio: A Bicentennial Portrait"	22	Tour
94.	7/31	Visitors to See Guest Lecturer Dr. David Horn "Butterfly Biogeography on the Lake Erie Islands"	24	Tour
95.	8/1	Lorain County Community College / Lorain, OH Kelley Meyer	16	Workshop
96.	8/4	Dave Emerling	5	Tour
97.	8/6	Dave Frederick	6	Tour
98.	8/7	Great Lakes Ecosystem Research Consortium	31	Conference
99.	8/7	Visitors to See Guest Lecturer Roger Knight "Interagency Management of Walleye Fisheries in Lake Erie"	11	Tour
100.	8/8	OSU Extension, West District Laura Callan	14	Conference
101.	8/8	Boy Scout Troop #369 / Columbus, OH Ralph Mauer	14	Tour
102.	8/11	OSU Development Office Linda Heyl & Guests-	4	Tour
103.	8/12	Heidelberg College / Tiffin, OH Dr. Oliver	6	Tour
104.	8/13	Put-in-Bay Nature Camp Lisa Brohl	18	Workshop
105.	8/14	Ohio Legislators & Invited Guests / Columbus, OH Dr. Jeff Reutter	40	Tour
106.	8/14	Visitors to See Guest Lecturer John Kleberg "Gibraltar and Jay Cooke"	11	Tour

Table 4 – cont'd

Date	Group Name/City/Leader	No.	Description
107. 8/18	Joan Marks	2	Tour/Lighthouse
108. 8/21	WNWO TV News Jim Blue, Anchor	4	Tour/Interview
109. 8/22	Ohio Chapter American Fisheries Society	25	Meeting
110. 8/23	Dan Hall	11	Tour
111. 8/25-27	OSU Residence Life / Columbus, OH Cheryl Lyons	44	Conference
112. 8/26	Curtis Meyer	3	Tour
113. 8/26	Catawba Island Garden Club / Catawba Island, OH Diana Martin	18	Tour
114. 8/26	Tom Izod	1	Tour
115. 8/27-28	Phillips-Osborne 7 th Grade / Painsville, OH Meg Anderson	19	Workshop
116. 8/28-29	OSU Watershed Academy J.P. Leiser	55	Workshop
117. 8/29	Great Lakes Commission Mike Donahue	9	Conference
118. 8/29	Genoa High School German Club / Genoa, OH	11	Tour
119. 9/2-3	Hilliard Station 6 th Grade I / Hilliard, OH Lynda Floehr	32	Workshop
120. 9/3-4	Hilliard Station 6 th Grade II / Hilliard, OH Lynda Floehr	33	Workshop
121. 9/4-5	Hilliard Station 6 th Grade III / Hilliard, OH Lynda Floehr	42	Workshop
122. 9/5	Jefferson Elementary / Port Clinton Jim Bergman	46	Workshop
123. 9/5-7	Friends of Stone Lab Board Members Annual Homecoming	16	Conference
124. 9/6	Stone Lab Open House – Gibraltar Island	655	Tour

Table 4 – cont'd

Date	Group Name/City/Leader	No.	Description
125. 9/6	Stone Lab Open House – South Bass Island Lighthouse	256	Tour
126. 9/6	Friends of Stone Laboratory Annual Meeting	52	Conference
127. 9/8	Portage Elementary / Port Clinton Troy Diels	55	Workshop
128. 9/8-9	Grace Brethren Home School / Galena, OH Deann Kennedy	13	Workshop
129. 9/9	Bataan Elementary School / Port Clinton, OH Marty Willis	36	Workshop
130. 9/9-10	Jonathan Alder PAVE / Plain City, OH Ann Holben	25	Workshop
131. 9/10	Elderhostel IV / Put-in-Bay, OH Susie Cooper	28	Workshop
132. 9/10-11	OSU Art Department / Columbus, OH Katie Lynch	3	Student Project
133. 9/10-11	Columbus Jewish Day School / Columbus, OH Mindy Bixel	15	Workshop
134. 9/11-12	Bexley Middle School / Bexley, OH Marge Galloway	42	Workshop
135. 9/12-14	Great Lakes Fisheries Leadership Institute / OH Frank Lichtkoppler	24	Conference
136. 9/15	Ottawa Co. Farm Service Agency / Oak Harbor, OH Jodi Bolen	14	Conference
137. 9/15-17	The Wellington School 7 th Grade / Columbus, OH Mike Smith	62	Workshop
138. 9/16	Elderhostel V / Put-in-Bay, OH Susie Cooper	25	Workshop
139. 9/17-18	Evangel Christian Academy 10 th Grade / Gahanna, OH Robert Shauck	37	Workshop
140. 9/18	St. Mary of the Falls / Olmsted Falls, OH Lorreta Gretzer	24	Workshop
141. 9/18-19	Dempsey Middle School / Delaware, OH Deb Bogard	41	Workshop
142. 9/18-19	Bellefontaine High School / Bellefontaine, OH Dennis Verselle	8	Workshop

Table 4 – cont'd

Date	Group Name/City/Leader	No.	Description
143. 9/19-20	Milford Jr. High School / Milford, OH Raylene Gerber	70	Workshop
144. 9/20	Boy Scout Troop 77 / Westlake, OH Don Warren	20	Tour
145. 9/20	Boy Scout Troop 253 / Kent, OH	25	Tour
146. 9/22-23	The Andrews School 9 th Grade / Willoughby, OH Lisa Richardson	41	Workshop
147. 9/23	Elderhostel VI / Put-in-Bay, OH Susie Cooper	19	Workshop
148. 9/23-25	The Wellington School 6 th Grade / Columbus, OH	55	Workshop
149. 9/25	Franklin Elementary School / Elyria, OH Holly Kramer	34	Workshop
150. 9/25-26	Highland High School / Medina, OH Joe Wise	35	Workshop
151. 9/26	Lakota Jr. High School / Amsden, OH Tom Rymers	32	Workshop
152. 9/29	West Holmes High School Science Club / Millersburg, OH Doug Mohr	18	Workshop
153. 9/29-30	Brecksville H. S. AP Biology 12 th Grade / Broadview Hts., OH Robert Berg	19	Workshop
154. 9/30-10/1	Worthingway Middle School / Worthington, OH Jim Wrightman	68	Workshop
155. 10/1-3	Columbus School for Girls 7 th Grade / Columbus, OH Bob Farrell	49	Workshop
156. 10/2	St. Vincent DePaul 8 th Grade / Elyria, OH Cindy Marquitz	28	Workshop
157. 10/3	Meadowlawn School I / Sandusky, OH Dawn Zappa	29	Workshop
158. 10/3	OSU Extension, Tuscarawas Co., OH Chris Zoller	6	Conference
159. 10/3	Bataan Elementary / Port Clinton, OH Brad Troller, Mrs. Troller and Wanda Shirkey	3	Tour/Cooke Castle
160. 10/3-4	Mount Union College / Alliance, OH Lin Wu	6	Workshop

Table 4 – cont'd

Date	Group Name/City/Leader	No.	Description
161. 10/5-6	Buckeye Island Hop Friends of Stone Laboratory Work Weekend	40	Conference Work Weekend
162. 10/6	Amherst Steel / Amherst, OH Darlene Elsasser	53	Workshop
163. 10/7	Meadowlawn School II / Sandusky, OH Dawn Zappa	51	Workshop
164. 10/8-9	Rocky River M.S. / Rocky River, OH David Opdycke	45	Workshop
165. 10/9-10	Robinson Jr. High School / Toledo, OH Diane McClellan	19	Workshop
166. 10/10-12	OSU Plankton Class / Columbus, OH Dr. David Culver	14	Workshop
167. 10/10-11	Granville Intermediate School / Granville, OH Kay Porr	18	Workshop
168. 10/11-12	Little Princesses / Columbus, OH Mike Fligner	17	Workshop
169. 10/13	Avon High School / Avon, OH Tess Wearsh	49	Workshop
170. 10/13-15	Hudson Middle School I / Hudson, OH Ken Radie	39	Workshop
171. 10/15-17	Hudson Middle School II / Hudson, OH Ken Radie	37	Workshop
172. 10/17	Owens Community College / Toledo, OH Mark Durvage	3	Workshop
173. 10/20-21	Hathaway Brown School 9 th Grade / Shaker Heights, OH Beth Armstrong	77	Workshop
174. 10/22-23	Hilliard Tharp 6 th Grade I / Hilliard, OH Jan Snyder	44	Workshop
175. 10/23-24	Hilliard Tharp 6 th Grade II / Hilliard, OH Jan Snyder	44	Workshop
176. 10/27-28	Jackson Middle School 8 th Grade / Grove City, OH David Crosby	66	Workshop
	TOTAL =	5709	

TABLE 5

**Stone Laboratory Scholarship Recipients
2003**

<i>Name</i>	<i>Institution</i>	<i>Name of Scholarship</i>
Bartolotta, Matthew	St Ignatius High	Fairport Harbor Rod & Reel Assoc.
Burger, Christina	Seton Home Study School	Friends of Stone Lab
Cates, Richard	Fayetteville High	Friends of Stone Lab-StateSciDay*
Ciola, Ashley	Ohio State Univ-Marion	Friends of Stone Lab
Costello, Kathleen	Ohio State Univ	Friends of Stone Lab
DeLosSantos, Adriana	Ohio State Univ	Friends of Stone Lab
Dunlap, Kathleen	Ohio State Univ	Friends of Stone Lab
Eckardt, Megan	Bay High	Kelly Prochazka
Faust, Alexis	Univ of Toledo	Ray Frederick
Furrow, Dona	Ohio State Univ	Friends of Stone Lab
Gillenwater, Daniel	Ohio State Univ	Fairport Harbor Rod & Reel Assoc.
Gilmore, Ann	Ohio State Univ	Friends of Stone Lab
Glatz, Robert	Ohio State Univ	Friends of Stone Lab
Haley, III, Norman	Ohio State Univ	Fofrich
Herak, Patrick	Ohio State Univ	Friends of Stone Lab
Hochstetler, Nikki	Westerville-South High	Friends of Stone Lab
Joseph, Susan	Ohio State Univ	Karen Jennings
Judge, Shelley	Ohio State Univ	Swaidner
Kaufmann, Michael	Ohio State Univ	Wiczulis
King, Jeremy	Ohio State Univ	Friends of Stone Lab
Lobdell, Craig	Ohio State Univ	Swaidner
Marantides, Andrew	Strongsville High	Polish Fishermen's Club
Marshall, Joshua	United High	Friends of Stone Lab
Morgan, Jennifer	Ohio State Univ	Pepsi-Cola Bottling Company
Muskopf, Laura	Ohio State Univ	Friends of Stone Lab
Nguyen, Kimberly	St Francis De Sales High	Ray Frederick
Nguyen, Stephanie	St Francis De Sales High	Ray Frederick
Ogunmusanmi, Oluwatosin	Westerville-South High	Ray Frederick
Oguz, Ayse	Ohio State Univ	Friends of Stone Lab
Olen, Paul	Ohio State Univ	Friends of Stone Lab
Paras, Kelsey	Lakewood High	Kelly Prochazka
Riddle, Andrew	Put-in-Bay High	Friends of Stone Lab
Seger, Kerri	Ohio State Univ	Friends of Stone Lab-StateSciDay*
Sosebee, Alan	Ohio State Univ	Friends of Stone Lab
Stanford, Kristin	Northern Illinois Univ	Friends of Stone Lab
Tishue, Cynthia	Ohio State Univ-Mansfield	Friends of Stone Lab
Ucar, Sedat	Ohio State Univ	Friends of Stone Lab
Wonderly, Betsy	Gibsonburg High	Ray Frederick
Yaussy, Charles	Bucyrus High	Swaidner
Ysseldyke, Jennifer	Big Walnut High	Friends of Stone Lab
Zollos, Katelyn	Lutheran West High	Friends of Stone Lab

StateSciDay* = Ohio Academy of Science State Science Day participant selected to receive an award from the Friends of Stone Laboratory scholarship fund.

TOTAL number of scholarships – 41

TOTAL value of scholarships – \$17,264

TABLE 6

Stone Laboratory Student Roster - 2003
(169 students)

<i>Name</i>	<i>Permanent City/State</i>	<i>Rank</i>	<i>Major</i>	<i>College</i>	<i>Institution</i>
Abdimajid Abdirahman	Columbus OH	High School Sophomore			West High
Karim Alasti	Columbus OH	Graduate Non-Degree		Graduate	Ohio State Univ
Juan Alonzo	Columbus OH	High School Sophomore			Marion-Franklin High
Daniel Aruscavage	Hughestown PA	Ph.D.	Food Science	Graduate	Ohio State Univ-Wooster
Carolyn Baker	Westerville OH	Graduate Non-Degree		Graduate	Ohio State Univ
•James Bales	Bowling Green OH	Master's	Aquatic Ecology	Biological Sciences	Bowling Green State Univ
Matthew Bartolotta	Willoughby Hills OH	High School Junior			St Ignatius High
Aaron Baumann	Centerville OH	Senior	Entomology	Biological Sciences	Ohio State Univ
Abigail Bihary	Bowling Green OH	Graduate Non-Degree		Graduate	Ohio State Univ
Lisa Bircher	Columbiana OH	Master's+		Graduate	Ohio State Univ
Christina Blakie	Columbus OH	Master's	Life Sciences	Life Sciences	Univ of Maryland
Michelle Boggs	Columbus OH	Master's	Education	Graduate	Ohio State Univ
Clare Bozek	Steubenville OH	Sophomore	Biology	Biological Sciences	Ohio State Univ
Shabeg Briar	Wooster OH	Ph.D.	Plant Pathology	Graduate	Ohio State Univ-Wooster
Emilia Briceno-Montero	Wooster OH	Master's	Plant Pathology	Graduate	Ohio State Univ-Wooster
Lisa Brink	Sunbury OH	Senior	Microbiology	Arts and Sciences	Ohio State Univ
John Bucklew	Gibsonburg OH	Graduate Non-Degree	Education	Graduate	Ohio State Univ
Christina Burger	Sunbury OH	High School Senior			Seton Home Study School
Andrea Bussell	Cincinnati OH	Senior	Zoology	Arts and Sciences	Ohio State Univ
Brita Carr	Galena OH	High School Sophomore			Big Walnut High
Richard Cates	Fayetteville OH	High School Senior			Fayetteville High
Ashley Ciola	LaRue OH	Junior	Zoology	Arts and Sciences	Ohio State Univ-Marion
Lindsey Clouston	Glenford OH	Senior	Education	Education	Ohio State Univ-Newark
James Coates	Lagrange OH	Senior	Biology	Biological Sciences	Baldwin-Wallace College
Kayla Combs	Perrysville OH	High School Senior			Loudonville High
Karen Cook-Hoggarth	Westerville OH	Master's		Graduate	Ohio State Univ
Amanda Core	Columbus OH	Master's	Plant Pathology	Graduate	Ohio State Univ
Meghan Corson	Circleville OH	Sophomore	Mathematics	Arts and Sciences	Bellarmino University
Kathleen Costello	Columbus OH	Master's	Math, Sci & Tech Edu	Graduate	Ohio State Univ
Susan Cross	Sandusky OH	Junior	Education	Education	Bowling Green State Univ-Firelands
Ann Dean	Lancaster OH	Master's	Science Edu	Graduate	Ohio State Univ
Adriana DeLosSantos	Youngstown OH	Sophomore	Animal Sciences	Food, Ag, and Env Sci	Ohio State Univ
Nicole DeVanny	Dublin OH	High School Sophomore			Dublin Coffman High
Brian Dickmann	Hilliard OH	Graduate Non-Degree	Science	Graduate	Ohio State Univ

<i>Name</i>	<i>Permanent City/State</i>	<i>Rank</i>	<i>Major</i>	<i>College</i>	<i>Institution</i>
Jessica Dingman	Lebanon OH	Junior	Evol&Eco	Biological Sciences	Ohio State Univ
Kathleen Dunlap	New Albany OH	Senior	Wildlife Mgt	Natural Resources	Ohio State Univ
Megan Eckardt	Bay Village OH	High School Junior			Bay High
Kevin Eichinger	Mansfield OH	High School Junior			St Peter High
Alexis Faust	Huron OH	Sophomore	Environmental Chemistry	Arts and Sciences	Univ of Toledo
Sayre Flannagan	Chillicothe OH	Senior	Wildlife Mgt	Natural Resources	Ohio State Univ
Zachary Foltz	Mansfield OH	High School Junior			St Peter High
Joel Frymier	Hilliard OH	Master's	Education	Graduate	Ohio State Univ
Dona Furrow	Jackson Ctr OH	Master's	Science Edu	Graduate	Ohio State Univ
Kyle Gay	Massillon OH	Ph.D.	Science Edu	Graduate	Ohio State Univ
Daniel Gillenwater	Powell OH	Master's	Ecological Engineering	Graduate	Ohio State Univ
Ann Gilmore	Westlake OH	Senior	Natural Resources	Arts and Sciences	Ohio State Univ
Robert Glatz	Amherst OH	Graduate Non-Degree		Graduate	Ohio State Univ
Erika Graney	Marysville OH	High School Sophomore			Marysville High
Ryann Graniere	Columbus OH	Senior	Biology	Arts and Sciences	Ohio State Univ
Christopher Green	Madison OH	Graduate Non-Degree		Graduate	Ohio State Univ
Joanna Grimes	North Ridgeville OH	Junior	Biology		Wittenberg Univ
Linda Gulick	Galion OH	Graduate Non-Degree	Education	Graduate	Ohio State Univ
Laura Gutierrez	Wooster OH	Master's	Plant Pathology	Graduate	Ohio State Univ-Wooster
Ryan Haley	Pickerington OH	Junior	Biology	Biological Sciences	Ohio State Univ
Norman Haley, III	Swanton OH	Junior	Fisheries Mgt	Natural Resources	Ohio State Univ
Lemone Hammock	Columbus OH	High School Senior			Beechcroft High
James Harper	Grove City OH	Master's	Science Edu	Graduate	Ohio State Univ
Cary Harrison	Newark OH	High School Junior			Licking Valley High
•Todd Hayden	Bowling Green OH	Master's	Aquatic Ecology	Biological Sciences	Bowling Green State Univ
Kirsten Hecht	Sandusky OH	Senior	Biology	Biological Sciences	Ohio State Univ
Patrick Herak	Columbus OH	Ph.D.	Science Edu	Graduate	Ohio State Univ
John Herbert	Columbus OH	Master's	Biology	Graduate	Ohio State Univ
Bridger Hill	Spencer OH	High School Junior			Black River High
Brandon Hixson	Grove City OH	High School Junior			Grove City High
Nikki Hochstetler	Westerville OH	High School Junior			Westerville-South High
Nancy Howell	Cleveland OH	Post-Graduate		Continuing Education	Ohio State Univ
Lisa Huelkamp	Columbus OH	Ph.D.	Science Edu	Graduate	Ohio State Univ
Katherine Johnson	Columbus OH	Master's	Geological Sciences	Graduate	Ohio State Univ
William Jones	Cedarville OH	Ph.D.	EDU T&L	Graduate	Ohio State Univ
Joaquin Jordan	Powell OH	Graduate Non-Degree		Graduate	Ohio State Univ
Susan Joseph	Fremont OH	Senior	Zoology	Arts and Sciences	Ohio State Univ
Raghavendra Joshi	Wooster OH	Ph.D.	Plant Pathology	Graduate	Ohio State Univ-Wooster
Shelley Judge	Columbus OH	Ph.D.	Geology	Graduate	Ohio State Univ
Michael Kaufmann	Toledo OH	Sophomore	Biology	Biological Sciences	Ohio State Univ
David Keister	Albion IN	Senior	Environmental Biology	Biological Sciences	Bethel College
Scott Kimball	Columbus OH	Ph.D.	EEOB	Graduate	Ohio State Univ

<i>Name</i>	<i>Permanent City/State</i>	<i>Rank</i>	<i>Major</i>	<i>College</i>	<i>Institution</i>
Jeremy King	Columbus OH	Master's	Natural Resources	Graduate	Ohio State Univ
Dunsinane Knox	Toledo OH	High School Junior			Calvin M. Woodward High
John Krock	Kenton OH	Post-Graduate		Continuing Education	Ohio State Univ
Lara Krum	Columbus OH	High School Sophomore			Centennial High
Lindsey Kubelka	Grafton OH	Junior	Biology		Wittenberg Univ
Kelvin LaGarde, Jr	Akron OH	High School Junior			North High
Michelle Lanning	Wellington OH	High School Junior			Black River High
Sheila Lewicki	Avon OH	Master's	Education	Graduate	Ohio State Univ
Choulene Li	Columbus OH	High School Senior			Northland High
Jessica Li	Columbus OH	High School Sophomore			Columbus Alternative High
Richard Limperos	Warren OH	Senior	Biology	Biological Sciences	Baldwin-Wallace College
Kathryn Little	Columbus OH	High School Senior			Columbus Alternative High
Thomas Lloyd	Columbus OH	Graduate Non-Degree		Graduate	Ohio State Univ
Craig Lobdell	Dublin OH	Master's	Science	Graduate	Ohio State Univ
Christin Lohstroh	Mt Sterling OH	High School Junior			Madison-Plains High
Jennifer Lukacsco	Reynoldsburg OH	Graduate Non-Degree		Graduate	Ohio State Univ
Ashley Malone	Columbus OH	High School Sophomore			Centennial High
Andrew Marantides	Strongsville OH	High School Senior			Strongsville High
Joshua Marshall	East Rochester OH	High School Junior			United High
Christopher Martin	Reynoldsburg OH	Ph.D.	Chemistry	Graduate	Ohio State Univ
Kendra Martin-Towles	Dayton OH	High School Junior			Colonel White High
Donald Masaitis	Fairview Park OH	Graduate Non-Degree		Graduate	Ohio State Univ
Heather McCarren	Columbus OH	Senior	Geo Sci	Arts and Sciences	Ohio State Univ
Aaron McKenzie	Powell OH	Master's	Science Edu	Graduate	Ohio State Univ
Danielle McKinney	Toledo OH	High School Sophomore			Central Catholic High
Amy Mikuszewski	Chargin Falls OH	Junior	Plant Pathology	Food, Ag, and Env Sci	Ohio State Univ
Christopher Miller	Bexley OH	Senior	Science Edu	Education	Capital Univ
Marie Miller	Cleveland OH	High School Senior			Cleveland School of the Arts
Kristy Mishler	Reynoldsburg OH	Master's	Science Edu	Graduate	Ohio State Univ
Sarah Mominee	Martin OH	Junior	Biology	Biological Sciences	Ohio State Univ
Jennifer Morgan	Columbus OH	Master's	Natural Resources	Graduate	Ohio State Univ
Nicholas Muller	Brunswick OH	Senior	Fisheries Mgt	Natural Resources	Ohio State Univ
Laura Muskopf	Wooster OH	Senior	Environmental Edu	Natural Resources	Ohio State Univ
Cristian Nava-Diaz	Wooster OH	Ph.D.	Science	Graduate	Ohio State Univ-Wooster
Kimberly Nguyen	Westerville OH	High School Junior			St Francis De Sales High
Stephanie Nguyen	Westerville OH	High School Junior			St Francis De Sales High
Bret Nolan	Medina OH	High School Sophomore			Highland High
Oluwatosin Ogunmusanmi	Columbus OH	High School Senior			Westerville-South High
Ayse Oguz	Columbus OH	Ph.D.	Integrated T & L	Graduate	Ohio State Univ
Georgia O'Hara	Columbus OH	Graduate Non-Degree		Graduate	Ohio State Univ
Paul Olen	Delaware OH	Graduate Non-Degree		Graduate	Ohio State Univ
Michael Painter	Newbury OH	Graduate Non-Degree		Graduate	Ohio State Univ

<i>Name</i>	<i>Permanent City/State</i>	<i>Rank</i>	<i>Major</i>	<i>College</i>	<i>Institution</i>
Kelsey Paras	Lakewood OH	High School Sophomore			Lakewood High
Jeremy Pasker	Toledo OH	High School Sophomore			Calvin M. Woodward High
Tamra Pleasant	Dayton OH	High School Junior			Meadowdale High
Katie Powell	Columbus OH	High School Junior			Briggs High
Joshua Pretzer	Culver IN	Graduate Non-Degree		Graduate	Ohio State Univ
Ashley Pyle	Columbus OH	High School Junior			Fort Hayes Metro Educ Center
William Rand	Madison OH	Graduate Non-Degree		Graduate	Ohio State Univ
Angel Rebolgar-Alviter	Columbus OH	Ph.D.		Graduate	Ohio State Univ-Wooster
Jennifer Reddington	Waterville OH	Senior	Zoology	Biological Sciences	Ohio State Univ
Erika Reedus	Columbus OH	High School Sophomore			Columbus Alternative High
•John Rhoades	Rocky River OH	B.S.			Heidelberg College, Graduate of
Andrew Riddle	Put-in-Bay OH	High School Sophomore			Put-in-Bay High
Kelly Riesen	Put-in-Bay OH	Post-Graduate		Continuing Education	Ohio State Univ
Amr Saeb	Columbus OH	Ph.D.	Plant Pathology	Graduate	Ohio State Univ-Wooster
Amanda Sagle	Columbus OH	Graduate Non-Degree		Graduate	Ohio State Univ
Michael Sandel	Columbus OH	Junior	Zoology	Arts and Sciences	Ohio State Univ
Karen Sapatka	Cleveland OH	Senior	Biology	Biological Sciences	Baldwin-Wallace College
Sarah Scalley	Toronto OH	Sophomore	Molecular Bio		Otterbein College
Kevin Schill	Columbus OH	High School Junior			Upper Arlington High
Kerri Seger	Minster OH	Sophomore	Zoology & Psychobiology	Arts and Sciences	Ohio State Univ
Heather Selock	Cambridge OH	Senior	Art Education	Arts and Sciences	Ohio State Univ
Andrea Shyjka	Columbus OH	Junior	Fisheries Mgt, Environmtl Ed	Natural Resources	Ohio State Univ
Melitta Smith	Columbus OH	Junior	Human Dimensions	Education	Ohio State Univ
Alan Sosebee	Napoleon OH	Senior	Biology	Biological Sciences	Ohio State Univ
LeAnn Southward	Columbus OH	Master's	Aquatic Ecology	Graduate	Ohio State Univ
Kristin Stanford	Put-in-Bay OH	Master's)		Northern Illinois Univ
Nicole Stepsis	Westerville OH	Master's	Natural Resources	Graduate	Ohio State Univ
Gretchen Swift	Columbus OH	Graduate Non-Degree		Graduate	Ohio State Univ
Ben Sylak	Columbus OH	Senior	Fisheries Mgt	Natural Resources	Ohio State Univ
William Talbert	Troy MI	Senior	Political Science	Arts and Sciences	Ohio State Univ
Armika Tatum	Cincinnati OH	High School Senior			Hughes Center High
Cynthia Tishue	Mansfield OH	Senior	Math & Sci	Education	Ohio State Univ-Mansfield
Christina Tonges	Loveland OH	Sophomore	Wildlife Mgt	Food, Ag, and Env Sci	Ohio State Univ
Donna Tucker	Lima OH	Graduate Non-Degree		Graduate	Ohio State Univ
Sedat Ucar	Columbus OH	Ph.D.	Education	Graduate	Ohio State Univ
Kenneth Urbanek	Akron OH	Master's	Biology	Biological Sciences	Kent State Univ
Dennis Versele, Jr	Bellefontaine OH	Graduate Non-Degree		Graduate	Ohio State Univ
Carolyn Waggoner	Mt. Vernon OH	Master's	Entomology	Graduate	Ohio State Univ
Sherry White	Sugar Grove OH	Graduate Non-Degree	Agriculture	Graduate	Ohio State Univ
Jacqueline Wilhelm	Put-in-Bay OH	High School Sophomore			Put-in-Bay High
Jason Williams	Blacklick OH	Graduate Non-Degree		Graduate	Ohio State Univ
Sara Williams	Sandusky OH	High School Junior			St Mary Central Catholic High

<i>Name</i>	<i>Permanent City/State</i>	<i>Rank</i>	<i>Major</i>	<i>College</i>	<i>Institution</i>
Michael Wisniewski	Columbus OH	Senior	Wildlife Mgt	Natural Resources	Ohio State Univ
Betsy Wonderly	Helena OH	High School Junior			Gibsonburg High
Keith Wycoff	Columbus OH	High School Junior			Northland High
Charles Yaussy	Bucyrus OH	High School Sophomore			Bucyrus High
Jennifer Ysseldyke	Sunbury OH	High School Sophomore			Big Walnut High
•Thomas Zablotny	North Royalton OH	Post-Graduate		Continuing Education	Ohio State Univ
Breanna Zack	Columbus OH	High School Junior			Upper Arlington High
Michael Zimmerman	Olmsted Twp OH	Junior	Fisheries Mgt	Natural Resources	Ohio State Univ
Katelyn Zollos	Rocky River OH	High School Sophomore			Lutheran West High

• = Enrolled as a non-credit workshop participant

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