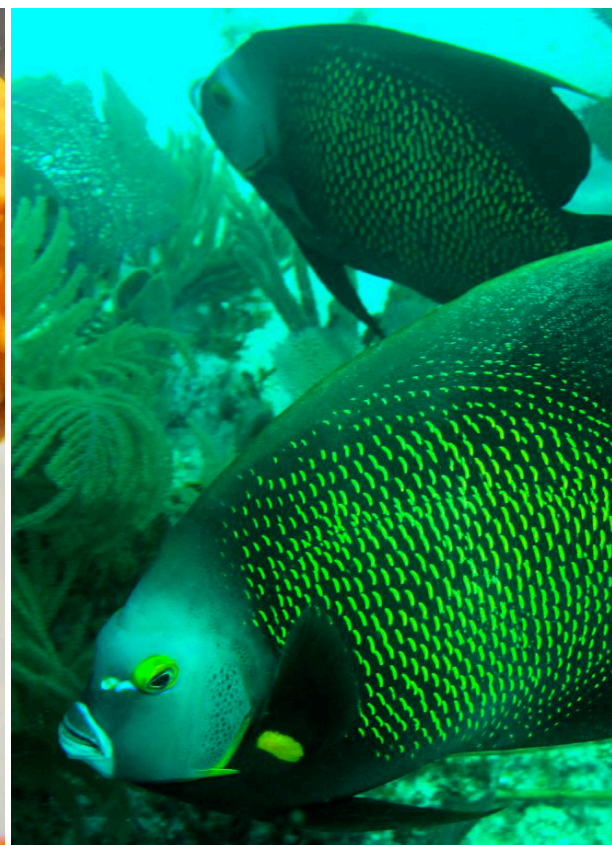




BY
DUANE
KAUFFMANN

WILLAMETTE VALLEY TO LONG KEY:

THE STORY OF THE GOSHEN
COLLEGE MARINE BIOLOGY PROGRAM





FOREWARD

As a professor in the Department of Biological Sciences, I have met family physicians, agriculture researchers, teachers, and many other Goshen College alumni who highlight their memories taking Marine Biology at Goshen College. Stories surface about catching sharks, identifying all manner of algae, and forming lasting bonds with their student colleagues. Students and professors alike have consistently become enamored with the marine habitats of the Florida Keys. It is a magical, complex, surprising place – it gets into your blood – it changes you.

Equally intriguing has been the story of how the program began. How does a small, liberal arts school in the Midwest come to acquire a Marine Biology facility in the Keys? In this story you will meet a diverse array of actors, whose intersecting lives and interests fueled the development and growth of a program now in its 46th year.

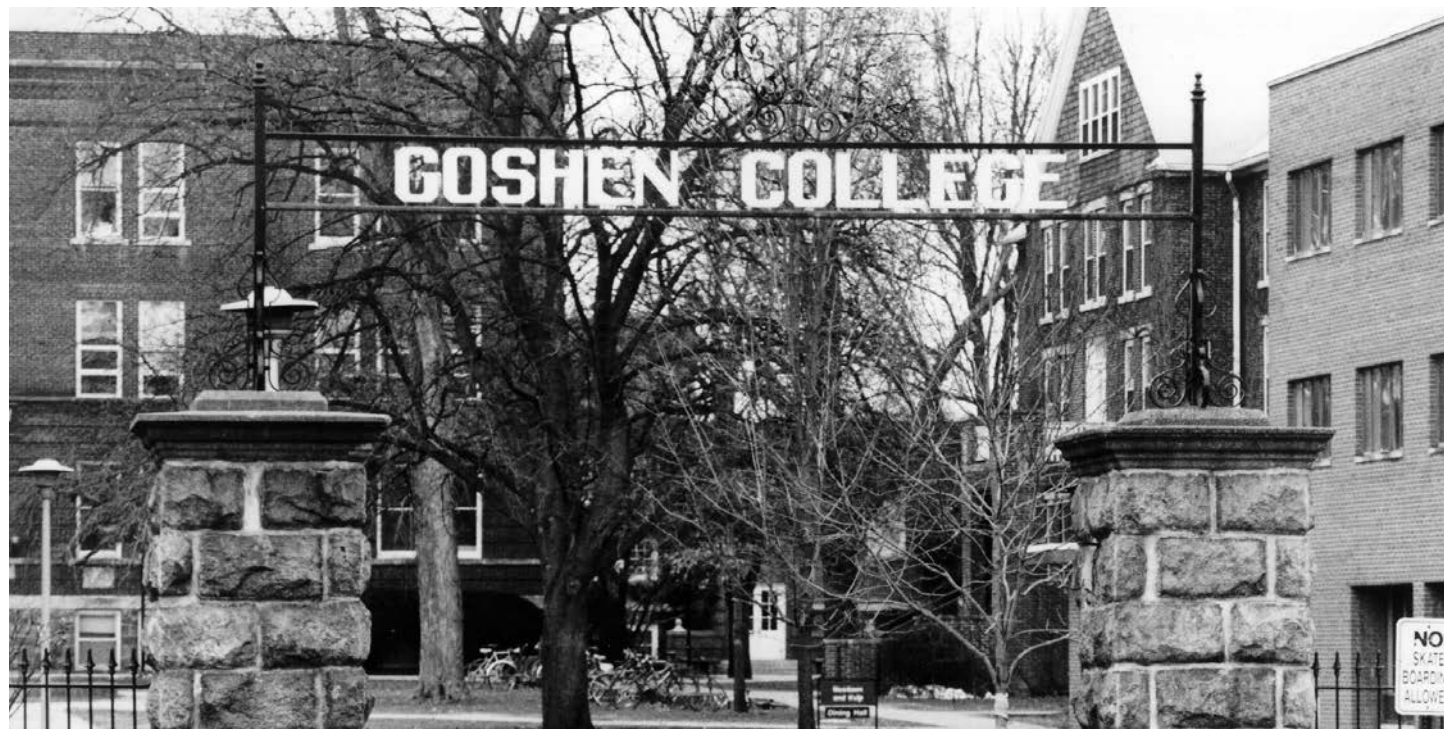
Thanks to Duane Kauffmann, who not only compiled the story told in this booklet, but also helped keep

the program moving forward for more than 30 years. Duane has worked diligently in creating taxonomic keys (his expertise is in gastropods), developing the college's reference collection, and nurturing relationships with our collaborators. These have been important gifts and we dedicate this booklet to his work. This history, still unfolding, is also dedicated to all the students new and old who have snorkeled in the Bight, identified a *Halimeda*, and revised research papers in the wee hours of the morning.

Of course the story could be retold with more details, and we invite you to contribute your personal stories to enrich the account! You are also invited to support and shape the development of new visions and directions for the Goshen College Marine Biology program for years to come. We look forward to hearing from you.

Ryan Sensenig

Department of Biological Sciences Chair, 2012
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IN THE FALL OF 1955, a typical Goshen College student began undergraduate studies many miles from his childhood home in Oregon. That student, Jonathan (Jon) Roth, had always had a keen interest in the outdoors, having spent many hours enjoying its numerous offerings. As a youngster Jon learned to hunt and fish. He stalked and landed many wily trout. He became a proficient marksman with a shotgun, bringing many ducks to the table. With a rural Oregon background and his interest in the natural world, he was rather naturally attracted to college courses in biology.

Jon was a good student, competing successfully against the many pre-med majors in his classes. Although Jon took biology courses from Dr. H. Clair Amstutz, Dr. Alta Schrock, and Dr. S. W. Witmer, it was the fall 1957 arrival of biologist/plant pathologist Dr. C. Franklin (Frank) Bishop which was to have the greatest impact on Jon's future. Dr. Bishop, having learned of Jon's abilities and interests from other faculty, soon chose Jon as his student assistant. Thus, even though Jon never had the privilege of taking a class from Frank (a fact Jon often lamented), they had many opportunities for interaction due to Jon's role as Frank's student assistant. This close interaction led to Frank becoming Jon's mentor. As Jon



LEFT: Jon Roth in dorm room during his first year at GC. MIDDLE: Mary Ann Smucker arrived at GC in the fall of 1956. RIGHT: Biology professor C. Franklin Bishop was Jon Roth's long-time colleague.

approached graduation, Frank urged him to apply for graduate studies in biology.

Jon was persuaded by Dr. Bishop's encouragement and applied to graduate school. Fortunately his academic record, and strong recommendations from GC faculty members, gained him entrance to Oregon State University. This turn of events allowed Jon to return to his roots in the picturesque Willamette Valley of Oregon. So following his graduation from GC, Jon and his new bride Mary Ann Smucker undertook the arduous cross-country trek to Corvallis, OR.

With plentiful financial aid and a commitment to his graduate studies, Jon was able to complete his Ph. D. in microbiology in just 3 years. During the latter part of that time, Jon was approached by representatives of GC about the possibility of returning to the Midwest to teach at his alma mater. Although they loved the West, the call of the Midwest, and loyalty to the Mennonite Church and to GC, had enough appeal for Jon and Mary Ann that they agreed to return to Goshen for Jon to assume a teaching position in the biology department. He began teaching in the fall of 1962 and his mentor Dr. Frank Bishop now became a departmental colleague. Jon proved to be an excellent, if demanding, teacher, and GC was pleased with its new hire. However, during the second year of teaching, Jon and Mary Ann began to wonder a bit if they wanted to continue to live and work in Goshen. They decided they were not ready to commit themselves to a long-term tenure at GC (a trend they saw among many GC faculty colleagues) and felt they should investigate other options. While GC officials did not wish to stand in the way of Jon's exploring alternative career possibilities, neither did they wish to close the door to a possible return. So it was agreed that Jon would take a leave of absence and pursue a period of postdoctoral study.

The chosen field of postdoctoral study was marine science and the location was the University of Miami Rosenstiel School of Marine and Atmospheric Science located on Virginia Key on the southeastern outskirts



Current campus of Rosenstiel School where Jon did his postdoctoral work.

of Miami, FL. Jon had an interesting year studying saltwater invertebrates with a stimulating and diverse group of faculty and students. Mary Ann had an equally interesting, if considerably more difficult and frustrating year, teaching in an inner city elementary school.

As the postdoctoral year came to a close, the question, which had never really gone away, was what to do come August of 1965. After considerable prayerful soul searching Jon and Mary Ann made the decision to return to Goshen where Jon would resume his teaching position at GC. It should not be surprising however, that along with the return to Goshen Jon brought a strong interest in the beauty and diversity of the marine environment. He couldn't help but share that enthusiasm with departmental colleagues. From those conversations came the idea of using the winter midterm break of 1966 to introduce a few GC students to the warm weather and rich resources of the marine world. Fortunately Jon was familiar with the University of Miami field station on Pigeon Key (located southwest of the Middle Keys city of Marathon and accessible from the famous "Seven Mile Bridge") and he was able to make arrangements to use that facility. In the first year, ten male students were willing to spend their midterm on this new venture. On a Friday in March of 1966, Jon and Frank and the students left the agricultural flatlands of northern Indiana to explore the diversity of the saltwater-world known as the Florida Keys.

Conditions for the first offering of Marine Biology were quite challenging. This included a lack of sufficient reference materials, screen-less windows, limited marine experience by the instructors, the lack of a boat, a lab comprised of sawhorses and sheets of plywood, and many mosquitoes and "no see-ums." Students signed up to use the few reference materials on a 24/7 schedule. Faculty and students waded and swam the shallow waters around Pigeon Key, rich with marine plants and animals, to collect specimens. The students used the limited lab facilities to create collections of plant and animal specimens that served as the primary course requirement. Jon and Frank served as course instructors, lab assistants,



This van and car are being loaded in the GC parking lot for the first trip to the Florida Keys for Marine Biology.

and dorm monitors, and also prepared all the breakfast, lunch, and evening meals.

The trip was very long and demanding (some 1500 miles one-way), the 16-hour days were tiring, the mosquitoes and no-see-ums were irritating, and the course resources were limited. Termites falling on those sleeping in the bunks and numerous cockroaches added to the subtropical ambiance. Although there were no visible signs of dissatisfaction, Jon and Frank wondered if the challenging conditions would send a message to the campus grapevine back on campus, “don’t do this.”



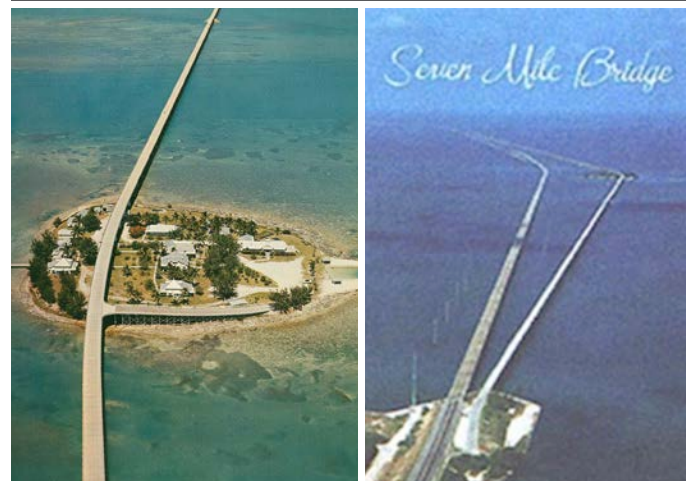
Bruce Glick with a barracuda caught during Marine Biology at Pigeon Key.

During the winter semester of 1967, Jon and Frank accompanied a second group of GC students to Pigeon

Key. The course, now coeducational, was very popular and there was no problem filling the course roster. The college acquired a small boat and some additional reference books and laboratory materials. The boat allowed for access to diverse collecting sites and the reference books made it possible to identify many of the plants and animals that were discovered.



Marine Algae by Taylor and *American Seashells* by Abbot were valued reference materials from the beginning; *Seashore Life* was added in 1976.



LEFT: Pigeon Key showing off-ramp from old Seven-Mile-Bridge. RIGHT: New Seven-Mile-Bridge (left) and old bridge (right) shown leaving Marathon (Pigeon Key at upper right).

However, now that the Marine Biology program seemed established, the less than comfortable living and lab conditions at Pigeon Key stimulated a search for better accommodations for the 1970 course. Such a location was found at Seacamp, located on Big Pine Key, about 15 miles southwest from Pigeon Key. Seacamp had facilities for offering courses such as Marine Biology and seemed a more suitable setting to achieve both course and interpersonal goals. (The latter goal has always been very important. Living and working closely with the

same set of faculty and students is in itself an important educational experience. Jon always argued that Marine Biology played an important role in stimulating GC discussion regarding off-campus coeducational learning, the best known result being the international Study-Service Term. Ironically, Marine Biology was not offered in 1969 due to Jon and Mary Ann serving as faculty leaders for a Study-Service Term in Nicaragua.)



Location of Seacamp on Big Pine Key.



Glen Miller in his Goshen College office.

Meanwhile at GC, longtime Chemistry professor Dr. Glen R. Miller was contemplating retirement. Glen had often invited Jon on “field trips” to his Michigan property where he shared his knowledge of flora and fauna with Jon. Glen told colleagues that he and his wife were planning to retire to South Texas. But in a way that parallels the Biblical story of the woman badgering a magistrate for attention (Luke 18), Jon frequently suggested to Glen that he might wish to try the Florida Keys as a retirement location. Glen Miller was not easily given to changing his mind. He was a man with a strong, and sometimes mischievous, personal character and very strong beliefs (which were frequently on the more conservative side of those most prevalent at GC). But Jon’s frequent reminders finally got Glen’s attention and he announced, perhaps with more exasperation than conviction, that he might “check out the Florida Keys on the way to Texas.” (Glen knew a lot about Chemistry, but one wonders a little about his knowledge of geography; the Keys are not exactly on the way to Texas.)

True to his word, Glen drove his pickup and camper to the Florida Keys. As things would have it, he came upon a KOA location on tiny Fiesta Key. He rented a plot on which to park his camper, left wife Pearl to her reading, and drove a couple of miles to the small village of Layton. He found the local hangout, a small restaurant, and stopped in. As Jon now tells the story, Glen almost immediately found some kindred spirits in Layton. He needed no further convincing, he stayed all winter on Fiesta Key (and never made it to South Texas).



An aerial view of Fiesta Key where Glen Miller parked his camper.



The welcome sign on the north side of Highway 1 as one enters Layton from the direction of Fiesta Key.

Among the first individuals whom Glen Miller came to know in this small middle Keys “city” was Captain Del Layton. Del Layton had been a grocer in Miami during the depression, but with shrewd foresight chose to invest his money by buying much of the undeveloped, mosquito-infested mangrove island known as Long Key. On that small Key, Del founded a town he named Layton. Del arranged for canals to be dug and lots to be cleared. He also saw to it that a Southern Baptist Church was constructed to serve the town and neighboring Keys.

From nearby Fiesta Key Glen Miller was well aware of these developments and it wasn't long before Glen and Pearl had purchased one of the homes in Layton.



Layton Community Baptist Church

It was now time for Glen Miller to turn the tables on Jon Roth. Even though Marine Biology had not been offered in 1969, it had found a home at Seacamp for the 1970 and 1971 academic years. It was sometime before the 1971 course that Glen told Jon “you talked me into coming here to the Keys, now you can return the favor. When you and the students are on Big Pine Key, on Sunday morning you need to bring the students to church in Layton and sing for us.” Jon agreed and the Marine Biology students and faculty got up early enough



Del Layton with 3-year-old Glen Kauffmann standing next to the yellow police car Del used to patrol streets and escort “hippies” through town.

to drive the 30 miles from Seacamp to Layton Community Baptist Church. Although the students did not constitute a professional choir, the singing was quite good (especially by small church Southern Baptist standards), largely due to the musically gifted leadership of Frank Bishop. Church deacon Del Layton was impressed. Here,

in the midst of the social unrest of the early 1970s, when college students were best known for being anti-authority rebels, was a group of clean-cut, neatly dressed, Goshen College students who attended church on Sunday morning. (As Police Chief of Layton, Del would sometimes usher hitch-hiking “hippies” from one end of town to the other with the admonition to “keep moving along.”)



Long Key Post Office with prominent display of Zip Code

“1” was important to Del) and a church. There was a State Park on the south edge of town, and even a landfill. But he had another important, unfinished piece to his vision for his town. As fate would have it, Del soon had an opportunity to pursue his dream.

In the winter of 1971-72 Glen Miller took ill. He and wife Pearl felt they should return to Goshen for medical treatment. Although Glen was in constant pain, he could assist in some preparations for returning. However additional help with packing seemed desirable and



Del Layton and Jon Roth

Del Layton was a man of vision and action. He had provided much for his small town: city hall, a fire station, several businesses, a motel, a post office (with Zip Code 33001, the

the restaurant “uptown.” When Jon joined Del the next morning, Bob Verrier, proprietor of Lime Tree Bay Resort was also present. Given his style, Del came rather directly to the point. He wished GC to move its Marine Biology program to Layton, a move that would fulfill Del’s vision of having an educational facility in his town.

Jon was taken a bit aback, but soon had the foresight to raise several very important questions. Where would the students stay? What about meals? What about a lab? What about storage facilities? What about the costs of moving the program?

But Del was ready and it also became obvious why Bob Verrier was at the breakfast. Del’s plan was for students and faculty to stay at Lime Tree Bay. The students would stay for 18 nights at the Resort at a fee affordable to student budgets. The students would form “eating groups” to take advantage of the fact that some of the Resort rooms had kitchenettes. Faculty would have rooms for their families at a cost acceptable to the College. (It was later discovered that Del Layton held the mortgage to



An early picture showing the location of Lime Tree Bay Resort.



LEFT: Artist Bob Verrier operated Lime Tree Bay Resort. RIGHT: Ella Verrier and friend Mickey

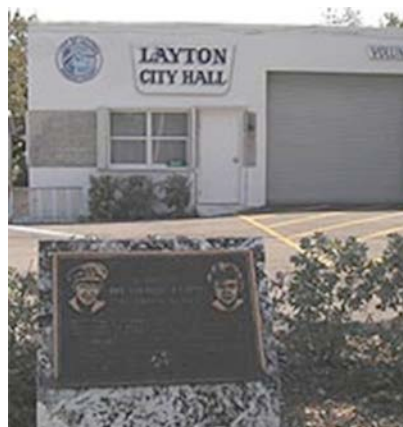


Lime Tree Bay Resort was the home for Marine Biology from 1971 to 1985.

Lime Tree Bay Resort; Verrier may have felt that it was in his best interest to be cooperative with Del’s plans to host GC students at a reasonable cost. The choice of 18 nights allowed for the 15 days of class needed for course credit.)

Del assured Jon and Frank that he would see what could be done about building a lab at the Resort and in the interim students could hold lab in City Hall. In the same building storage was available along the walls beside the fire trucks. And as for incidental expenses, Del pulled out his checkbook and wrote out a check for \$5000 (remember these were 1971 dollars). This was money which could be used to “help out with the first year moving and relocation expenses.” The check could be cashed if GC decided to move to Layton.

When Jon returned to Goshen, he scheduled a meeting with Goshen College President Laurence Burkholder. He raised the issue of whether GC should consider moving the successful Marine Biology program from Seacamp to Layton. President Burkholder raised a number of questions about the potential move, which Jon was able to answer. But to Jon, it seemed that the President was not fully convinced that the move was a good idea. So at a strategic point in the meeting, Jon pulled the \$5000 check from his pocket and placed it in front of the President. As soon as the President’s eyes returned to their normal size, he said “I think we should try it, don’t you?” Thus, the move from Seacamp to Layton was approved.



Layton City Hall. Del and Mary Layton on plaque in foreground.

with a very different primary course project. Frank and Jon identified a number of “study sites” around Long Key. A group of three students was assigned to each location. Their task was to identify all of the algae and invertebrates they could collect and identify within the assigned area. They were also to map the site and pay attention to variables of tide, salinity, and bottom character. Their coursework was complete when they had written and submitted a report of their project (with a map as an appendix). The final day of the course a “practical” served to test student learning, with primary focus on taxonomy of common organisms and knowledge of phylogenetic classification.



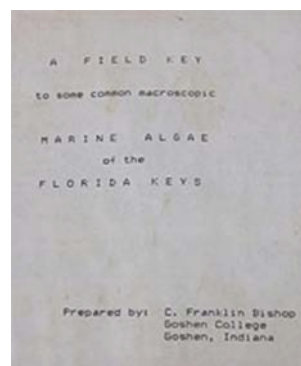
Photo, circa 1973, showing Del Layton, Jon Roth (back row), Frank Bishop, and Bob Verrier during lab construction.

So it was that in the spring of 1972 Goshen College students found themselves studying algae and invertebrates in the spartan confines of the Layton City Council chambers (also the Judge’s quarters). And they found themselves

home for the Goshen College Marine Biology program, with a welcoming community, a boat dock, many nearby study sites, convenient living arrangements, and a laboratory.



TOP: Exterior of laboratory built at Lime Tree Bay.
BOTTOM: Interior of laboratory building at Lime Tree Bay.



To enhance the success of the course, Frank Bishop used his 1972-73 sabbatical to do intensive study of subtropical marine algae. The results of this work, while he was in residence at the University of South Florida, were identification keys for student use. These dichotomous keys for the green, brown, and red algae were greatly appreciated and much used for the next 25 years. Not to be forgotten were the frequent grumblings when students completed

an identification only to be told they had made a wrong choice in using the key and their ID was incorrect.



Duane Kauffmann, GC senior
Class picture

With the Marine Biology program now at home in Layton, and with a challenging and exciting set of course activities now in place, the story of the program meanders again to incorporate another outsider. In the spring of 1963, another farm boy, this one from a dairy farm in central Illinois, graduated from Minier High School. In the fall he began studies at Goshen College. Following the typical student pattern of exploring numerous courses of study he ultimately settled on a major in psychology. Although all GC students were required to take General Psychology, the number of students majoring in the field was quite small. This was due in part to the fact that psychology lacked clear identity as its own field given its organizational location within the Education Department. This farm boy, who proved to be a good student, was encouraged to pursue graduate study in psychology with the possibility of returning to teach in, and build up, a Department of Psychology, at Goshen College. And so it was, after graduate training at the University of Illinois, Dr. Duane Kauffmann became a faculty colleague of Jon Roth and Frank Bishop.

As chance or fate or Divine providence would have it, the recreational activities of Jon and Frank focused on golf, a sport for which there was a considerable contingent of GC faculty practitioners. Duane had also taken up the sport and Frank, Jon, and Duane, along with Physical Education professor John Ingold, made regular trips to Oak Hills Golf Course. Given the frequent faculty interaction across disciplines at GC, and the regular trips to the golf course, it was natural for friendships to

emerge (although it must be noted that Jon and Duane first learned to know each other well while serving on a committee focused on grading, a topic on which they had rather considerable differences of opinion). But beyond the mutual interest in golf, Duane had interest in the ocean and was naturally intrigued by the fascinating stories that his biology professor friends were telling about Marine Biology and the Florida Keys.

At much the same time as Frank, Jon, and Duane were learning to know each other, Duane’s younger brother Keith followed his own educational trail to Goshen College. He chose to major in biology. In 1971 Keith Kauffmann took the Marine Biology course while it was still being held at Seacamp. He returned with stories of a wonderful experience and some colorful and interesting specimens. Most memorable for Duane was a large shiny brown shell commonly referred to as a cowrie.

The cumulative effect of stories and shell specimens collected by Frank, Jon, and Keith became irresistible and Duane decided he needed to check out this marine experience for himself. In May 1976 Duane was able to arrange his schedule to spend time in Layton while Marine Biology was in session. It did not take long for him to get hooked on the study of marine plants and animals. Two memorable boat trips were instrumental. On one of those trips, a 4-mile boat ride to a large shallow flat near Conch Key, Duane was able to find a large, mature, and very colorful Queen Conch (*Strombus*



LEFT: The green alga *Halimeda opuntia* grows in large clumps and is home to many animals.
RIGHT: *Strombus gigas* (Queen Conch)

gigas). (This was in the days when these large colorful shells were still plentiful and no collecting regulations were in effect.) The other boat trip was to Old Dan Bank, a narrow boomerang-shaped flat about a half-mile offshore from Lime Tree Bay Resort. There Jon showed Duane how to collect a clump of the calcareous green alga *Halimeda opuntia* and carefully sort through it to find small (6 to 10 mm) shiny orange and white shells of the genus *Volvarina* (formerly *Hyalina*).

Duane was so intrigued by the rich diversity of plants and animals in the warm marine waters around Long Key that he built the proposal for his first GC sabbatical around living in Layton. While considerable reading and writing focused on psychology were integral to the overall sabbatical plan, a significant portion of time would be devoted to learning about the marine plants and animals around Long Key. The sabbatical proposal was approved and in September 1978, Duane, wife Dottie, and 2-year-old son Glen moved into Room 7 at Lime Tree Bay Resort. As expected, Duane learned a great deal about collecting marine gastropods and identifying red and green algae during the next 9 months. During Marine Biology in the spring of 1979, Duane served as the “student assistant” for Frank and Jon. Forty-five students were enrolled for the course.



The car is parked in front of Room 7 where Duane, Dottie, and Glen spent 1978 - 79.

While Duane was turning his love of the ocean into a new avocation, Jon and Frank continued to attract large numbers of students to the Marine Biology course. But, Del Layton was still not quite satisfied. He asked for



Frank and Jon welcome Del Layton.

another meeting with Frank and Jon. At that meeting Del indicated he wanted the college program to have a place and a building. He offered Goshen College a lot on the northeast side of Highway 1, just off North Layton Drive. In the course of considering this very generous offer, Jon and Frank reluctantly came to the conclusion that this location, not on the water and very close to the busy Overseas Highway, was not suitable. Del, while disappointed, understood their concerns and told them he would look into other options. Somewhat later he offered a lot off of South Layton Drive on the shore of Zane Grey Creek. This was a prime building location and was accepted.



Map showing locations of original lot offered (green arrow) and the final location on Zane Grey Creek (red arrow).

Funds were not immediately available to build a facility in Layton a priority, so for several years the lot lay vacant. Del Layton was now past 80 years of age and longed to see his vision completed. He was concerned that Goshen College was not moving fast enough. So at yet another meeting with Frank and Jon, Del expressed his concerns about the lack of a building, and indicated that if GC did not commence with a building in the near future, he would take the lot back. That stirred action in Goshen and due to another fortuitous turn of events soon led to a building at 131 South Layton Drive.



Exterior of Goshen College Marine Laboratory at 131 South Layton Drive.

At several points in this narrative we have had to digress to tell stories of persons whose lives became intertwined with Marine Biology, such as Glen Miller and Duane Kauffmann. Now we turn to an intriguing link to Mrs. Margaret McCracken. This surprising piece of the Marine Biology story begins in Goshen. Dr. Samuel L. Yoder, professor of education, met an interesting campus visitor in the GC snack shop. The guest inquired about a collection of Native American artifacts that a Jacob Lind had given to GC. Fortunately, Sam Yoder’s office was in the basement of the Good Library, and since some portions of the artifact collection were on display nearby, Sam was able to show the collection to the guest.

As the fate of the Marine Biology program would have it, the inquiring guest was a neighbor to a Mr. Arthur Lind.

When Mr. Lind learned his neighbor was to visit Goshen, he asked that he inquire about a donated collection of Native American artifacts which his grandfather Jacob Lind had donated to Goshen College. It was fortunate that the neighbor made connections with Sam Yoder. Not only did Sam know about the artifacts, he was also someone who enjoyed good conversation. Thus it was that he learned about the visitor’s connection to the Linds.

Another GC employee who enjoyed meeting people and good conversation was development officer Gordon Yoder. When Gordon learned of the interaction Sam had had with the Lind’ neighbor, he was intrigued. Gordon had grown up in eastern Ohio, the area in which Arthur Lind had once lived. Gordon also knew his genealogy and was aware that he had a connection, although a bit distant, to the Lind family. Never one to miss a chance to learn to know new people, Gordon determined that if he got the chance he would visit Arthur Lind.

As it happened, some time later Gordon was in Florida, where Arthur Lind had moved. He called Arthur and inquired if they might meet to talk about their kinship lineage. Although Lind was somewhat hesitant, a meeting was arranged and a pleasant conversation ensued. In the course of discussing their families, Gordon learned that Arthur Lind had a sister living in the Florida Keys.

Arthur Lind’s sister, Margaret, had married and was living on Big Pine Key. During one of his many travels on behalf of Goshen College, Gordon Yoder was in the Keys. He learned where Margaret Lind (now McCracken) lived and he paid a visit. The visit was cordial and Mrs. McCracken became a supporter of Goshen College. Over the next several years, Gordon made regular contact with her, and other college officials, including President Laurence Burkholder and his wife Harriet, stopped to visit.

After several years, the McCrackens moved to a different residence. They put their older house on the market, but it did not sell, due at least in part to its somewhat



1ST ROW LEFT: Winston Gerig, Doug Smucker and David Strycker with a shark.
 1ST ROW RIGHT: Jon Roth and Lime Tree Bay proprietor Bob Verrier prepared rival recipes of conch chowder for a festive meal.
 2ND ROW LEFT: Nudibranch, *Costasiella ocellifera*
 2ND ROW MIDDLE: On the dock.
 2ND ROW RIGHT: Duane Kauffmann
 3RD ROW LEFT: Students preparing a meal in the kitchen.
 3RD ROW MIDDLE: Interior of lower level laboratory
 3RD ROW RIGHT: Dolphin
 4TH ROW: Photo from May 18, 1975 *Miami Herald* showing students on the original "sea cow" pontoon boat.

rundown condition. Thus it was that during one of the contacts between GC and Margaret McCracken she wondered if GC would like the older house as a charitable gift. She felt that GC personnel might be able to fix it up and sell it. Goshen College accepted the generous gift. Gordon Yoder soon made another visit to the Keys to facilitate the legalities of the gift, and Kenneth King, retired Director of the Physical Plant, went to the Keys and worked on the house. Some effort was needed to renovate the house and GC alumnus Dwight Graber from Sarasota and a number of volunteers restored it to a standard that would sell. In a short time the house was sold for more than \$100,000.

The proceeds from the sale of the McCracken house, along with some other funds, made it feasible to think about a marine biology laboratory at the Layton site. Although the College had engaged an architect to design a building, the plan submitted was more elaborate and costly than needed for a working Marine Biology laboratory inhabited by active college students. A plan sketched by Jon and Frank was chosen as the model for the building. The "Roth/Bishop plan" was for a laboratory on the lower level with bedroom accommodations and eating facilities for students on the upper level. Due to code regulations, the walls surrounding the ground-level laboratory are "breakaway," with the remainder of the building designed to withstand hurricane force winds.

Wayne Erb, a cousin of Glen Miller, built the block fence between the laboratory facility and the street. Wayne, who had moved to Layton with his wife Alice from



Alice and Wayne Erb

Elkhart, IN, was a meticulous craftsman, and the fence was finished to his exacting specifications. For many years Wayne looked after the Goshen facility and those who used it greatly appreciated the care he put into its upkeep.



The building was completed and the dedication occurred in 1986. Del Layton, though in declining health, was able to participate in the dedication. He was very pleased that this final piece of his Layton vision had been completed. Del Layton passed away in 1987. (Margaret McCracken was encouraged

to visit the Goshen program and facility on several occasions. Even though she lived only 40 miles away, she declined, indicating that she thought well of GC and was satisfied that the gift money had been well used.)

From the outset it was understood that Goshen College could make arrangements to have other educational institutions, and selected individuals connected to GC, make use of the facility at 131 South Layton Drive. Not only would students from high schools and other colleges be able to study the rich diversity of the marine environment, but the income from such use would provide finances which GC could use for maintenance and improvements. In addition, Goshen College has used the facility for some non-credit educational offerings as well. Several week-long "courses" have been offered to alumni and, through joint planning with the admissions office, to high school students.

One evening in May 1994, Jon and Duane (who had been offered the second faculty position when Frank retired following the 1987 term) were sitting in the lower level faculty office. A knock on the outer door was followed upon entrance by a deep booming voice inquiring, "Is anyone here?" Jon shouted to come on back and Dr. Charles (Chuck) Shaffer of Wittenberg University in Springfield, OH introduced himself.



Dr. Chuck Shaffer is now retired from Wittenberg University.

Dr. Shaffer sat down and in the ensuing conversation indicated that he had been bringing students to the Keys for some years under arrangements with Duke University. That set-up was now ending and Dr. Shaffer was interested in whether the GC facility might be available for his program.

Jon Roth, who had a long-standing suspicion of marine pseudo-biologists, carefully steered the conversation to topics that required knowledge of the algae and invertebrates—his way of conducting an authenticity test. Dr. Shaffer, who had done work on wound-healing in soft corals, also had expertise in marine microbiology. This familiarity convinced Jon that Chuck was a genuine marine biologist (and not just a fan of large marine mammals).

Convinced that Dr. Shaffer would run a marine program compatible with GC academic and behavioral standards, planning moved forward and in the fall of 1996, Chuck Shaffer began offering a semester-long program of 15 hours of credit. Registration in this Wittenberg University program was available to GC students and several took advantage of this 13-week opportunity. Goshen College personnel were pleased with the operation of the Wittenberg program and appreciated the income generated. And between the Goshen building, and other facilities provided by Keys Marine Laboratory located on the north side of Highway 1, Dr. Shaffer was

able to offer his students a rich and academically rigorous semester of marine studies.

The Wittenberg marine program meant the GC facility was being used during additional weeks of the year and more students could benefit from this prime study location.

The program has experienced consistent use from a number of colleges (most notably Hillsdale College, Hillsdale, MI), community colleges (most notably Broward Community College, Ft. Lauderdale, FL) and high schools (most notably Central Christian High School, Kidron, OH and Goshen High School, Goshen, IN) have made regular use of the facility.

In the late fall of 2005, Hurricane Wilma brought winds in excess of 100 miles-per-hour to the Florida Keys. (By historical standards, the Florida Keys are long overdue



TOP: Hurrican winds blew the pontoon boat off the blocks and put holes in the pontoon.
BOTTOM: Photo showing damage to soffit and shingles due to the winds of Hurricane Wilma, November 2006.

for a major hurricane. Until Hurricane Wilma, there had been very little tropical storm damage to the Keys since the devastation of Hurricane Donna in 1960. Before that time, a major storm had struck the Keys about every 20 years, including the 1935 Labor Day Hurricane, which destroyed the Keys overseas railroad, and which remains the strongest hurricane to ever hit the U. S.) Wilma caused damage to the roof of the facility and to one of the pontoon boats, which had been on blocks and was blown off. Insurance money covered the cost of repairs to the building and the damaged pontoon boat was sold to Hillsdale College.

Student interest remains high and it is anticipated that new faculty members will be stimulated to add additional chapters to the Williamette to Layton story. Given the unusual and fortuitous twists and turns of that story it can be expected that such future chapters will have their own share of unexpected interventions by people, events, and nature.

Since this account was completed in the fall of 2007, several new developments have occurred. First, Dr. Ryan Sensenig has been hired by the GC Biology Department and has agreed to add Marine Biology to his teaching assignments. As an ecologist with a strong scientific emphasis, Dr. Sensenig will be able to continue the 40+ year tradition of GC student learning in the Florida Keys. In addition, Jody Saylor from the GC biology faculty has become involved as a second instructor in the course. Second, conversations with Old Dominion University (Norfolk, VA) led to the development of a working relationship. Third, the Goshen High School Marine Biology program, now in its 40th year, has moved their housing to Lime Tree Bay Resort and their student research base to the GC facility. These new developments are a strong move toward maximizing the use of the building at 131 South Layton Drive. Del and Mary Layton would surely be pleased.

- Dr. Duane Kauffmann, 2007





PHOTOS THROUGHOUT THE BOOK BY:

Duane Kauffmann
Jon Roth
Dottie Kauffmann
George Smucker
Ryan Sensenig
Nathaniel Day (cover photo and others)

AFTERWORD

In the several years since this history was written, new developments speak to the ongoing and emergent story of the GC Marine Biology Program.

In 2009, to honor the contributions of Dr. Jonathan N. Roth and Dr. C. Frank Bishop, President James Brenneman officially named the station the J.N. Roth Marine Biology station and the laboratory the C.F. Bishop Marine Biology Laboratory. We think this a fitting honor to the legacy these scholars and mentors have left the college.

The Department of Biological Sciences continues to nurture collaborations with researchers and teachers from other institutions. We have developed partnerships with Dr. Mark Butler from Old Dominion University in Norfolk, VA. He and his team of graduate students and colleagues from University of Florida have based their research at the GC station, enhancing the facility's use for research and teaching. Led by Carl Weaver (GC Biology 1969), the Goshen High School team has generously supported the college's programming through sharing equipment and boats, in addition to organizing a volunteer crew to help in facility renovations. Dr. Tony Swinehart continues to bring his students each spring from Hillsdale College (GC Biology 1992) and Mr. Von Schrock (GC Biology 1988) brings students from Central Christian High School every year.

After 46 years, the Marine Biology program continues to adapt and change, inspiring new relationships, creating new memories, influencing the careers and paths of a multitude of students and professors alike. May this short history serve to celebrate the excellence that is possible when diverse, passionate, and generous people immerse themselves in a collaborative vision – where the emergent beauty is more than the sum of the parts.

- Ryan Sensenig, Chair
Department of Biological Sciences, 2012



Those involved in the celebration included: (left to right) Tony Swinehart, associate professor of biology at Hillsdale College and 1992 Goshen College alumnus; Suzanne Bishop, wife of the late Goshen College Professor of Biology Franklin Bishop; President Jim Brenneman; Goshen College Professor Emeritus of Biology Jonathan Roth; Carl Weaver, biology teacher at Goshen High School and 1969 Goshen College alumnus; and Ryan Sensenig, assistant professor of biology at Goshen College.