**AQUAPONICS IN ACTION**

**A SUMMER PROGRAM JOINTLY SPONSORED TO FURTHER EDUCATE FACULTY FROM ACROSS THE UNITED STATES AND PUERTO RICO**

 The year was 2015 and Mr. Harry Berman, Class of 1961 graduate of Mergenthaler Vocational Technical High School, Baltimore, Maryland began his volunteer work at the Baltimore Polytechnic Institute after a long and distinguished career at Honeywell Aerospace /NASA.

 Harry’s never-ending desire to learn, grow and to help students develop hands on education led him to respond to an Email from the IEEE for an engineering volunteer position at Poly. Since that day, Harry has volunteered tirelessly spending his time and talent in helping to develop a aquaponics program at Poly. Working closely with Mr. Buddy Wolfe, Head of Engineering and Mr. Jeff Reeser, Poly 1985 and now faculty member who began the process of the study of aquaponics at Polytechnic, Harry has led the charge for a program which offers “theory and practice” to its ultimate level. Student designed, built and staffed, aquaponics at Baltimore Polytechnic Institute has grown over the past number of years to its current level with Harry expanding his touch in the project to include the IMET and the University of Maryland through the Sea Grant Program, under the direction of Mr. Adam Frederick, Assistant Director.

 In its first year, student conducted testing was completely done by hand for such things as temperature, PH and oxygen. Then came the computer Water Quality Monitoring System, “PolyPonics”, Mark1 and Mark II and now Mark III, the former was a system designed thru a wired network and now Mark III plus thru a WiFi network of nine (9) probes which are built into the tank system and all data is captured on computers with adjustments that can be made at the direction of the computer.

 The University has funded and conducted a summer workshop each year. The first year, only four (4) participants were involved. This year, approximately thirty (30) participants from across the United States and Puerto Rico participated in the workshop which was held at South Carrol High school in Carrol County, Maryland. This group included administrators as well as educators. For the first time this year, NOAA funded the program.

 Fifteen (15) years ago, Carrol County schools made the commitment to get into Aquaponics under the leadership of Mr. Jim Peters, Supervisor of Science.

 Five (5) years ago, Harry offered some insight from the students and himself at Polytechnic introducing them to “PolyPonics”. South Carroll High school was the first school in Carroll County to become involved.

 Also heavily involved in the Aquaponics In Action program is Mr. Glenn Henderson, a retired Harford County teacher. Glenn put together the manual for this years program. This years program began it’s gathering at IMET, where the participants spent a full day along with a dinner sponsored by NOAA The next four days were spent at the state of the art facility at South Carroll High in Carroll County, Maryland.

 Harry was intimately involved in the program, providing documentation from Baltimore Polytechnic Institute complete with the WiFi set up including cameras for looking into the fish tanks. Harry, recognizing the value of this material was always cognizant of bringing recognition to Polytechnic by insisting that it was named

“PolyPonics” and that the Poly seal and logo would always be prominently displayed in all material. The Sea Grant logo is also displayed, as they have been a major investor in the program; but smaller. Harry has also insisted that this will be “Open Source Software, meaning it is registered and copy written under Poly’s name and as a result, if sold, Baltimore Polytechnic Institute will receive a royalty.

 As part of the 2019 Aquaponics In Action program, fifteen (15) systems were built and taken back to the home sites of the participants. These have a value of over $2,000.00 each.

 Suffice to say, that without the initial interest on the part of Mr. Buddy Wolfe and Mr. Jeff Reeser and the continued strong leadership of Mr. Harry Berman, Baltimore Polytechnic Institute would not have developed the relations with IMET and Maryland Sea Grant and would not be the leader in this field at the high school level. Harry continues to recruit new students who are motivated, self starters and with the funding supplied by the Baltimore Polytechnic Institute Foundation and Alumni Association, this program will continue to be an integral part of the Poly education experience with real life, hands on experience providing a visible link for students showing them that the subjects they study at Poly are relevant in the real world.