Taylor said, "participate together to remove the barriers that prevent those with disabilities from being more physically active," My vision for Activity4All is to have fully inclusive activity programs where people with and without disabilities are able to be a part of a movement to eliminate stereotypes and preconceived notions about people with disabilities," he said. "When we're all out on the water, there is no distinguishing between participants, students and instructors.

Community based learning programs like this one provide a powerful learn-by-doing experience," said program founder and director Kevin Taylor. "Students apply knowledge gleaned from their studies to improve the quality of someone's life. They learn to see past the disability and connect with the human being.

The Adapted Paddling Program is one lab option for Kinesiology students in Taylor's Adapted Physical Activity class, a required course for all Kinesiology majors. Students learn how to modify kayaks for use by people with a wide variety of disabilities before offering a free paddling clinic to local residents who are disabled. Many of the participants are paralyzed, some from the waist down (paraplegia), some down one side of their body (hemiplegia), and few from the neck down (quadriplegia). All have profound challenges to their physical movement – until they get on the water.

Paddling is easily adapted for many people with a physical disability and can be incredibly empowering for them, Taylor said. If a person with paralysis goes from a wheelchair, where they encounter daily physical barriers, to a kayak, where everyone has the same movement, it changes their perceptions of what they can and cannot do.

Many of the modifications needed for participants to paddle are simple, made with foam, duct tape and other fairly common everyday materials. Old bicycle inner-tubes, for example are used to make paddles easier to grip for people whose disability impacts their grip strength. The inner-tube is attached to the paddle with electrical zip-ties and then covered with duct tape. The user's hand can then be inserted between the inner-tube and paddle shaft for an assisted grip.

Students frequently tell Taylor this lab work is an invaluable part of the learning experience, letting them see first-hand how concepts and theory from lectures are applied in a practical setting.

Kinesiology major Kevin Bezerra said the class allowed him a glimpse into his future career. "I was able to be a part of a movement to eliminate stereotypes and preconceived notions about people with disabilities," he said. "When we're all out on the water, there is no distinguishing between participants, students and instructors.

To Taylor this human impact is also critical to academics. "Students remember how these experiences make them feel," he said. "They often form a bond with the individuals they serve. This helps students to remember the content and message of inclusion I try to get across in the class."

Attitudes are the biggest barriers Taylor hopes to help remove. "The average person doesn't see someone with a disability as being able to engage in physical activity," he said. "Only one thing really stops people with disabilities: socially constructed expectations. Attitudes are the real disability. My students and I are working to change that."

In the future, Taylor hopes adapted paddling will be a part of a viable, self-sustaining nonprofit called Activity4All, allowing increased community participation and acting as a partner with Cal Poly’s STRIDE program to get people with disabilities more physically active.

"My vision for Activity4All is to have fully inclusive activity programs where people with and without disabilities participate together to remove the barriers that prevent those with disabilities from being more physically active," Taylor said.
Cal Poly Kinesiology professor Kevin Taylor launches Lee and Pfeiffer into Morro Bay with the help of the Adaptive Paddle Launch Vehicle.

He sees ActivityAll continuing to provide Cal Poly students with learn-by-doing experiences but with greater community participation and fundraising efforts. The population of people with disabilities is not wealthy, Taylor said, so any cost can be a barrier to participation.

Taylor’s collaboration with the local community extends to three other physical activity programs: the Friday Club, a Special Olympics Program; EyeCycle, a tandem bicycling program for people with low-vision and blindness; and Envision Tango, a dance class, also for people with blindness or low-vision.

COLLABORATION

The Adapted Paddling program was founded in fall 1999 when Taylor came to Cal Poly from the University of Northern Colorado. Taylor and his wife met a local physical therapist whose husband was paddling instructor. The couple – Cal Poly alum Jeff Clark and his wife, Monica – was interested in the idea of adapted paddling but lacked volunteers and a suitable venue. That started Taylor thinking about his students.

The Clarks moved away soon after the program started, so Taylor reached out to the community. "Our program would not be possible without individuals such as paddling instructor Tom Reilly and occupational therapist John Lee, both of whom volunteer their time and expertise to the program," he said.

The Adapted Paddling Program was extended when Taylor began collaborating with Cal Poly’s College of Engineering. With a $10,780 grant from the Christopher and Dana Reeve Foundation, Taylor and Mechanical Engineering Professor Frank Owen worked with senior project students from both Kinesiology and Engineering to design and build a kayak for someone with full quadriplegia.

During this so-called “SoloQuad Conversion Project,” students outfitted a kayak from the Adapted Paddling Program with an electric trolling motor and a “sip and puff” control.

Cal Poly alum Bryan Gingg, who is unable to move his arms or legs, sipped and puffed on a plastic straw to independently pilot the kayak through the estuary at Morro Bay.

According to Taylor, this was just the beginning. “An exciting part of the SoloQuad Conversion project,” he said, “was how it spawned a wonderful collaborative relationship with the College of Engineering.”

Engineering and Kinesiology students recently finished an Adapted Paddling Launch Vehicle (APLV), including a lift that allows users to control their transfer from the chair to the kayak. One idea now being considered would turn the APLV into a joystick-controlled “shuttle vehicle” which participants could use to drive into the water before floating away in their kayak. The current projects are supported by a $125,000 grant from the National Science Foundation, awarded to Taylor and three colleagues in the College of Engineering.