POINT of VIEW [faculty]



## SWIMMING WITH SNAILS

Since 1983, Rob Dillon has been helping students understand the intricacies of biology. We asked him to share his philosophy and approach to the classroom experience.

## BY ROB DILLON

## THE REPORTER ASKED ME A VERY REASONABLE QUESTION.

It's one I've been asked on many occasions in the past: "Why do you study snails?" And I deflected his question with my usual reply, "I always have." My 1982 Ph.D. dissertation, "The Correlates of Divergence in Isolated Populations of the Freshwater Snail,

*Goniobasis proxima,*" still sits on a shelf by my desk for easy reference. In the file cabinet below is a 1972 program from the Virginia Junior Academy of Sciences with a star marking my "Response to Stimuli in the Freshwater Snail, *Physa*." Back home I've got my mother's old scrapbook with a 1960 clipping from the Waynesboro News-Virginian, "Five Year Old Collects Rocks and Shells."

I have indeed always studied snails. The reporter took my reply as an answer to his question, but it is not. Nor would a legitimate response have anything to do with the value or importance of snails. The little brown ones I study are useless, and justifiably obscure. I haven't had a research grant in years. Nor would a

candid answer invoke the involvement of students in the research experience, even though quite a few certainly have contributed. Students would be attracted in far greater numbers to almost any other research topic. Nor do I study snails because my research findings translate easily into the classroom, although amazingly, a paper I wrote with an undergraduate here in 1992 is cited in the textbook we use to teach Genetics 305.

In fact, I have no idea why I study snails. The reporter might just as well ask a codfish why he swims.

I imagine that most of my colleagues in the biology department would report similar feelings if pressed about their own research. Sure, some of them do work on important questions and get big grants. All of us involve students, and integrate our research experiences into the classroom. But we're all codfish, and we're swimming anyway.

When we hire new faculty for our department, the first question we consider is the research emphasis to be specified in the headline of the job advertisement. Then, the primary criterion by which we select finalists for interview is their record of scientific publication, and the primary criterion by which we judge each finalist is the quality of the research seminar he or she offers to us, the faculty. My colleagues and I want to see how well the new fish swims. The question of "why" does not enter our minds.





This might surprise a newspaper reporter, or indeed anybody not immediately familiar with the College. We are not a research university. According to the Charter of 1785, our function is "the proper education of youth." Don't teaching abilities or classroom experience play some role in the hiring of biology professors at the College of Charleston?

Yes, but only secondarily. As is true throughout the liberal arts and sciences tradition, professors at the College are not teachers. We are professionals in some other discipline, who teach.

I myself am a scientist, not a teacher. This observation is not intended to slight the teaching profession in any way. My mother was a teacher, my wife is a teacher, and half of both our families are teachers. A teacher's job is to help his or her students – who are delivered into the classroom with a great variety of interests, backgrounds and learning styles – learn. Every day the teacher faces rows and columns of little codfish, jaybirds and hoptoads, and he or she must engage the entire menagerie in the subjects of swimming, flying and hopping.

Thank heaven that's not my job. I hate school and everything about it – classrooms, desks, tests, grades and even books. About 10 years ago I spent the longest day of my entire life trying to teach biology at Middleton High School west of the Ashley, failing miserably. As much as I admire teachers, I could never be one.

We professors do not deal with different "learning styles." We expect our students to match our own learning styles. In Genetics Lab 305L, we are critical, rigorous, precise and quantitative. We assume the values, language and culture of science. Our lives are focused on the construction of testable hypotheses about the natural world. In other words, we are all codfish in Rita Liddy Hollings Science Center room 200, and we swim.

Swimming does not follow simply from "learning about swimming," as though college were the 13th grade. I often surprise my Genetics 305L students with the admission that I don't know any genetics, but that it doesn't matter, because I Google. The pace of scientific advance is so rapid that any arbitrary genetic factoid I might choose to share with them in the first week of the semester will be obsolete by week 14. So professors in the liberal arts and sciences tradition do not answer questions, we ask them. We're not building castles here, we're laying roads. Well, torturing my analogy to the very end, in Genetics 305L, I suppose I'm digging a canal.

And here is the essence of a liberal education. For these same young men and women who this morning I have tossed thoughtlessly into the canal of science will this afternoon be expected by the jaybird-poet fussing high above his American Literature 207 class to fly. And this evening, the hoptoad-historian squatting in front of her European Civilization 101 will expect them to catch insects with their tongues.

Why? None of us ever asks. But students who survive four years of drowning, falling and frustrated insectivory will emerge with vivid appreciations of the many ways one might approach the world. They will have been scolded by jaybirds who know only air and bullied by hoptoads who see but the riverbank. And way back in the corner of Rita Liddy Hollings Science Center room 200, they whisper one to another, there lurks a genuinely nasty codfish, who for some mysterious reason, swims with snails.

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