

**COMMITTEE ON FACULTY RESEARCH LECTURER
REPORT TO THE RIVERSIDE DIVISION
MAY 28, 1998**

To be adopted:

The Committee on Faculty Research Lecturer of the Riverside Division is pleased to nominate Professor David Reznick as Faculty Research Lecturer for 1999. David N. Reznick took his Ph.D. at the University of Pennsylvania in 1980 under the direction of the eminent ecologist Robert Ricklefs. He was a visiting faculty member at the University of Maryland until he joined UCR's Department of Biology in 1984 as an Assistant Professor. He received an accelerated promotion to Associate Professor in 1989 and attained the rank of Professor in 1995. His studies are already classics in the field of evolutionary biology and have rapidly been incorporated into many of the most respected texts and monographs in modern evolutionary biology.

Dr. Reznick is an evolutionary ecologist with a research focus on the evolution of life histories. This concept is central to Darwinian fitness, since a species' life history specifies the scheduling of critical life stages and the allocation of limited resources among frequently competing needs (such as growth versus reproduction). Life history is a cornerstone of evolutionary ecology, but until relatively recently it has been almost exclusively a descriptive and theoretical science. In this context Professor Reznick has had a large impact through a number of scholarly critiques on alternative approaches used to test life history theory. However, he is primarily known as a pioneer and prime mover in applying rigorous experimental tests of life history theory to natural populations in field environments.

Professor Reznick uses stream fish—primarily Trinidadian guppies—as his main experimental system. These fish are excellent subjects because they have short generation times, occur in large and easily manipulated wild populations, and can be easily grown in captivity for laboratory study. Professor Reznick's research demonstrated that life histories of wild guppy populations subjected to different predators varied according to theory. Furthermore, these life history differences were genetically based and therefore could be a product of natural selection. Subsequently, Professor Reznick's painstaking and rigorous studies have further established the causal role of predation on guppy life history evolution. Probably his most important, and widely known, work to date is a series of elegant and unprecedented experimental field manipulations of selective factors affecting life history. These involved transplanting guppies or their natural predators between low-predation and high-predation sites, and then comparing phenotypic and genetic changes in life history between control and experimental populations. A recent paper in the journal *Science* -- widely cited in both the scientific world and in the popular press -- demonstrated that evolution in natural situations can be extremely rapid. Guppy populations subjected to novel predation regimes evolved at rates that are thousands of times faster than the average rate of evolutionary change as revealed in the fossil record. This work is

extremely important because it provides the most direct and robust experimental evidence that natural selection is sufficient of itself to account for evolutionary diversification.

Professor Reznick has served on the editorial boards of the most prestigious journals of evolution and ecology. He also serves on numerous National Science Foundation grant panels and is frequently invited to present seminars or participate in symposia around the world. In summary, he has clearly attained international stature as one of today's preeminent evolutionary biologists.

In addition to his exemplary research program, Professor Reznick has been a dedicated and innovative instructor for a wide variety of courses ranging from lower division introductory offerings to graduate core classes and seminars. His primary undergraduate assignment at UCR has been Biology 161A (Functional Anatomy of the Vertebrates), but he has also taught Biology 20 (Introduction to Population Biology, now called Biology 5C), Biology 118 (Field Course in Evolutionary Ecology), and Biology 105 (Evolution). At the graduate level, Professor Reznick was instrumental in developing the basic core curriculum for students in our graduate program's very successful track in evolutionary biology and ecology. He has taught a range of graduate courses including Biology 216 (The Theory of Evolution), Biology 218 (Field Course in Evolutionary Ecology), and Biology 282 (Seminar in Genetics and Evolution). Professor Reznick's participation in undergraduate and graduate instruction includes considerably more than superb classroom and laboratory teaching. For example, he has gone to great lengths to acquire skeletal materials and other instructional specimens for Biology 161A, through agreements with local zoos and animal parks. While somewhat macabre at times (the elephant head in Professor Sherman's cold room is an excellent story, but one that is perhaps best left untold for a general audience), this passion for specimens has generated an exceptionally diverse teaching collection and some very unusual opportunities for his students. Professor Reznick's research lab always includes a number of undergraduates, and he has frequently obtained NSF Research Experience for Undergraduate funds to help support them.

The Committee appreciates the efforts of Professor Mark Chappel, Chair of the Dept. of Biology, toward preparing this vignette.

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