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Kyeong Hah Roh (khroh@math.asu.edu), School of Mathematical and Statistical Science, Arizona State University, P.O. Box 871804, Tempe, AZ 85287-1804, and **Aviva Halani*** (halani@mathpost.asu.edu), School of Mathematical and Statistical Science, Arizona State University, P.O. Box 871804, Tempe, AZ 85287-1804. *Enhancing Student Understanding of the Concept of Limit via Instructional Provocations.*

This presentation aims to address how instructional interventions may provoke college students to develop their reasoning and understanding in advanced mathematics. Two undergraduates from transition-to-proof courses participated in a teaching experiment for ten one-hour sessions in fall 2009. In this presentation, we focus on one of the sessions in which the research team engaged students in the ε -strip activity for the limit of a sequence. Data included videotapes of the session, copies of students' written work, and students' reports of interesting and challenging aspects of the session. In the data analysis, we traced changes in the students' criteria for and their reasoning about the convergence of a sequence as the instructional interventions were implemented. From our data analysis emerged contrasting prompts, pivotal-bridging examples, stimulating questions, and devil's advocate as effective instructional provocations. These provocations played a crucial role in developing students' reasoning and deepening their understanding of the concept of limit. We will discuss what types of, and to what extent, instructional moves would foster development of student reasoning. (Received September 20, 2010)