Keynote

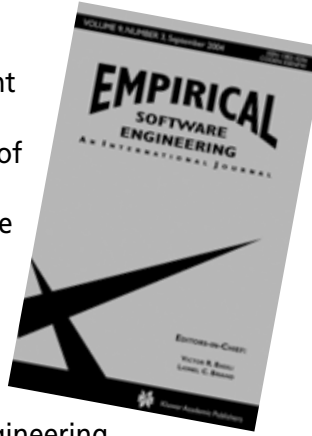## The Role of Empirical Study in Software Engineering

Although most scientific and engineering disciplines view empiricism as a basic aspect of their discipline, that view has not been the tradition in software engineering. There should be a symbiotic relationship between the development of theories and empirical studies that test and evolve that theory. This talk discusses of the role of empirical study in the understanding and improvement of the software product and process. It offers a personal, historical perspective of the use of empiricism through a series of example applications that demonstrate the various roles that empiricism can play. The examples are taken from the author's own experience and include the use of empirical study to improve an organization's product quality and productivity in the Software Engineering Laboratory at NASA/Goddard and to evaluate and evolve the effectiveness of various software technologies for use in improving the dependability of software. It also suggests research directions for empirical study in software engineering.

Symposium

Defining a Software Measurement Program: Matching Software Measurements to Business Goals
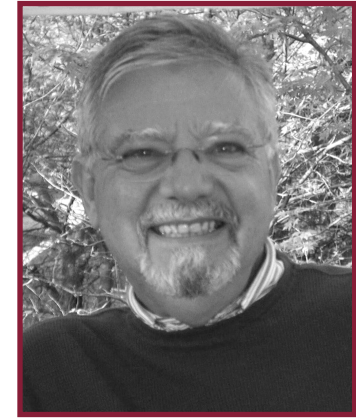
Measurement efforts in the software domain have had limited success because the existing measurement approaches and techniques are not easily adapted to different organizations. Often, they take too long to implement, cost too much, and deplete resources from "real work." Not to mention, the process of establishing a measurement program is complex. These challenges require organizations to make tough decisions specific to their own circumstances, especially within the context of their business objectives. To address these issues, Victor Basili presents a comprehensive approach that ties corporate goals to the software components that are critical to your business in order to identify the most important measures and ones that can be implemented cost effectively. The approach provides a traceable path from goals to measures, a way of expressing assumptions made, the selection of strategies for selecting and implementing goals at various levels, and a mechanism for evolving the goals and measures as the organizational measurement program matures.

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Distinguished Lecture Series in Computer Science

Victor R. Basili, Ph.D.

Professor of Computer Science
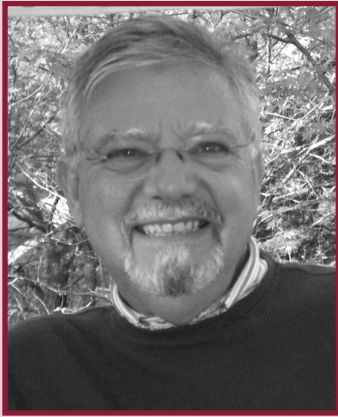University of Maryland

Monday, October 2, 2006
Cleary Alumni & Friends Center

Co-sponsored by the

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Dr. Victor R. Basili is Professor of Computer Science at the University of Maryland. He holds a Ph.D. in Computer Science from the University of Texas and honorary degrees from the Universities of Sannio (Italy) and Kaiserslautern (Germany). He was Executive Director of the Fraunhofer Center - Maryland and a founder and principal of the Software Engineering Laboratory (SEL) at NASA/GSFC. He works on measuring, evaluating, and improving the software development process and product via mechanisms for observing and evolving knowledge through empirical research, e.g., the Goal/Question/Metric Approach, The Quality Improvement Paradigm, the Experience Factory. He is a recipient of several awards including a NASA Group Achievement Award, a NASA/GSFC Productivity Improvement and Quality Enhancement Award, the 1997 Award for Outstanding Achievement in Mathematics and Computer Science by the Washington Academy of Sciences, the 2000 Outstanding Research Award from ACM SIGSOFT and the 2003 Harlan Mills Award from the IEEE Computer Society. Basili has authored over 200 papers, served as Editor-in-Chief of several journals (*IEEE TSE, Journal of Empirical Software Engineering*) and program chair and general chair of several conferences (ICSE). He is an IEEE and ACM Fellow.

Monday, October 2, 2006

10 a.m.   **Registration**
Cleary Alumni & Friends Center

10:30 a.m.   **Keynote**
The Role of Empirical Study in Software Engineering

11:30 a.m.   **Reception for Dr. Basili**
Cleary Alumni & Friends Center

3 p.m.   **Symposium**
Defining a Software Measurement Program: Matching Software Measurements to Business Goals

4 p.m.   **Informal Questions/Social**
Cleary Alumni & Friends Center

All events are open to the public but may we suggest you reserve a place by registering in advance using the form attached.

Persons attending the Lecture Series may park in University Lot #12, the Cleary Alumni & Friends Center at East Avenue & La Crosse Streets.

For further information contact:
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