



DEPARTMENT OF THE NAVY
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Naval Research Laboratory
Washington, D.C. 20375

Prof. Rob deRuyter, Head Biocomplexity Search
Department of Physics
Swain West 165
727 East Third Street
Indiana University
Bloomington, IN 47405-7105

Dear Prof. deRuyter,

I would like to recommend Dr. Stefano Boccaletti for a faculty position in the School of Informatics. As an active researcher in the field of nonlinear dynamics I have observed Dr. Boccaletti's work for several years. I have also collaborated with him and organized conferences with him. I feel I know him and his work quite well.

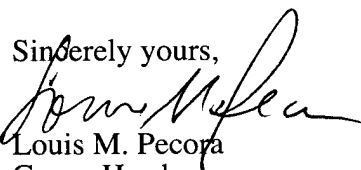
Dr. Boccaletti is a highly regarded theoretical physicist, but one who has a particularly good aptitude for connecting theoretical ideas in his field of nonlinear dynamics to potential applications and practical uses in many other areas. It is his ability to apply his ideas in conjunction with experimental collaboration which makes him a good candidate for multidisciplinary research in related biological fields.

There are several areas of research in which Dr. Boccaletti is active. One is the synchronization and control of chaotic systems. His recent work on "A unifying definition of synchronization for dynamical systems" has also inspired investigations in the field of nonlinear dynamics which reconsider the scientific meaning behind the word "synchronization." His work on synchronization conditions in coupled oscillator systems is also well-known and establishes him as an active authority in that area. This is especially true of his work with German collaborators on the new topic of phase synchronization. This is a type of synchronization of two systems that can be detected from data and which can point to collective, correlated behavior in systems as wide ranging as electronic circuits, chemical reactions and cardiac and EEG rhythms.

In the optical sciences he has coauthored the first experimental evidence of bulk-boundary transition in pattern formation in nonlinear active optics, and the first experimental evidence of domain coexistence in two-dimensional pattern formation in passive optics.

In the area of excitable media Dr. Boccaletti coauthored papers explaining the transition to fibrillated states of cardiac tissue, and, most recently, introducing a new indicator for the quantum-classical correspondence in classically chaotic systems.

Given Dr. Boccaletti's breadth of endeavors and the wide spectrum of his research I am certain he would be a creative addition to a diverse faculty in the School of Informatics. I highly recommend him.

Sincerely yours,

Louis M. Pecora
Group Head,
Nonlinear Effects in Materials