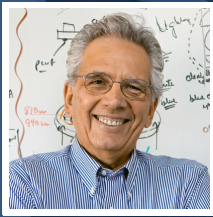


# The Next Step in Minimally Invasive Surgery



Richard D. Gitlin

State of Florida 21st Century Scholar, Distinguished University Professor, Visiting Professor, Electrical Engineering Industrial Positions (selected), Senior Vice President, Bell Labs

## CURRENT RESEARCH

Incorporating wireless communication and networking technology into biomedical systems

In contrast to open-procedure surgery, minimally invasive surgery (MIS) provides many benefits to patients, reducing pain, hemorrhaging, and scars by using small incisions in the body to insert special laparoscopic tools such as camera devices, light sources, and surgical instruments that help perform the operation. Dr. Richard D. Gitlin, State of Florida 21st Century Scholar, Distinguished University Professor and Agere Chair of Electrical Engineering at University of South Florida, is leading an interdisciplinary team that is pioneering a new paradigm for MIS that results in faster, safer, and less expensive procedures. The first step in this transformation is being realized by developing a wirelessly controlled **M**iniature and **A**nchored **R**emote **V**ideoscope for **E**xpedited **L**aparoscopy (**MARVEL**)---a high-definition embedded wireless robotic camera. Such a high-definition robotic camera, with an embedded array of light emitting diodes (LEDs) for illumination, with pan, tilt, and zoom capabilities inside the body via remote wireless control, will open a new era in MIS that addresses current medical limitations in laparoscopy ---and, in fact, can replace the very costly laparoscope! The long-range goal of the **MARVEL** system, of which the **MARVEL** camera is the first component, is to provide a network of wirelessly controlled mobile devices (such as imaging devices, surgical tools, post-operative sensors, and power supplies) that will be inserted into the surgical cavity through a single incision and will provide a new platform for MIS.

Prior to joining academia, Dr. Gitlin had a distinguished career at AT&T Bell Labs where he was co-inventor of DSL...

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## AFFILIATION

 University of South Florida

## EDUCATION

- Sc.D. in Electrical Engineering 1969, Columbia University

## AWARDS

- Distinguished University Professor-University of South Florida, 2013
- Charter Fellow of the National Academy of Inventors (NAI), 2012
- State of Florida 21st Century Scholar, 2008
- National Academy of Engineering, 2005
- AT&T Bell Labs Fellow, 1987
- and 1 more...

## RESEARCH AREAS

Health & Wellness, Wellness, Aging Research

## FUNDING REQUEST

Your contributions will support Dr. Richard D. Gitlin, at University of South Florida, as he creates novel wireless technology inside the human body for biomedical systems and miniaturizes the MARVEL research models from 30mm to 10mm. Donations will help fund \$500-1M/year required to support personnel, and allow further research in networking of *in vivo* devices, device mobility, "dissolvable" devices, and other new devices and capabilities. Help advance minimally invasive surgery to a new paradigm by supporting Dr. Gitlin!