



# IEEE Life Sciences Initiative

<http://lifesciences.ieee.org>

**Dr. Peter Staecker**  
**IEEE President-Elect**

**Oct 4-5, Washington DC**

# 29 Societies, Council and Committees are active in Life Sciences

- Antennas and Propagation
- Biometrics Council
- Circuit and Systems
- Communications
- Computational Intelligence
- Computer
- Control Systems
- Consumer Electronics
- Electron Devices
- Engineering in Medicine and Biology
- Geoscience and Remote Sensing
- Industry Applications
- Microwave Theory and Techniques
- Nanotechnology Council
- Nuclear Plasma Sciences
- Oceanic Engineering
- Photonics
- Power Electronics
- Reliability
- Robotics and Automation
- Sensors Council
- Signal Processing
- Solid State Circuits
- Society for Social Implications of Technology
- Systems Council
- Systems, Man and Cybernetics
- Ultrasonics, Ferroelectrics, and Frequency Control
- IEEE Committee on Earth Observations
- IEEE-USA, Medical Technology Policy Committee

# IEEE Rich Portfolio of Life Sciences Assets

## Existing IEEE Presence in Life Sciences (LS)

### Technical Committees

- 30 IEEE Technical Committees in LS-related matters, over many different Societies

### Publications

- IEEE Emerging Topics in Life Sciences (OA e-Journal)\*
- 18 are dedicated to LS
- 22+ others cover additional aspects of LS

### Conferences

- Over 120 Life Sciences Related Conferences in 2012

### Standards

- IEEE-11073 Standards approved by ISO
- Additional Standards and Projects (e.g., P1906.1, P3333.2)

\* 2014 Launch

# ***IEEE Life Sciences New Initiative***

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- **...coordinate all technical activities as currently distributed among various Societies/Councils,**
- **...to promote the technical leadership of IEEE in Life Sciences and Engineering,**
  - **including bioengineering, biomedical engineering, healthcare technology, and applications of various technologies to life sciences and healthcare.**

# Our main goals

- **To stimulate development and dissemination of new meaningful and useful results at the intersection of Life Sciences and Electrical Engineering, Computer Engineering and Computer Science**
- **To attract researchers of diverse background to present and discuss their new work in IEEE forums**
- **To increase interest of well defined “isolated” communities in cooperation across disciplinary borders**
- **To establish IEEE as a productive player and leader in developing the pertinent disciplines**

# Our Main Tool: Life Sciences Portal

## <http://lifesciences.ieee.org>

Since the June 2011 launch, more than 150 Life Sciences articles (original and reprinted from major IEEE LS publications) have been posted on the Portal.

The screenshot shows the IEEE Life Sciences Portal homepage. At the top left is the IEEE Lifesciences logo, and at the top right is the IEEE logo. A navigation bar includes links for Home, About, Articles, Publications (highlighted), Conferences, Education, and Media. Below the navigation bar is a search bar with the text "Search IEEE Life Sciences" and a search button. To the right of the search bar are social media icons for LinkedIn and Facebook, and a "Subscribe to the Newsletter" button. The main content area features a large article titled "Sports Sensing: An Olympic Challenge for Computing" with a sub-headline "Sensor nodes are becoming small and light enough for athletes to wear imperceptibly, yielding new types of data that can be used to enhance performance." and a "Read more" link. The article image shows a black and white athletic shoe with a red circle highlighting a sensor node on the sole. Below the main article are three smaller sections: "Technology Spotlight" with a "View All" link and an image of a molecular model; "Feature Article" with a "View All" link and an image of a hand wearing a sensor; and "Hot News!" with a list of three items: "Congratulations Are In Order!", "Read the latest IEEE Life Sciences Newsletter!", and "Join IEEE Life Sciences LinkedIn Group".

# Life Sciences Newsletter



The screenshot shows the header of the IEEE Life Sciences Newsletter for August 2012. The header includes the IEEE Lifesciences logo and the IEEE logo. Below the header, the title "IEEE Life Sciences Newsletter" is displayed, followed by the subtitle "News and Views at the Crossroads of Life Sciences and Technology" and the date "August 2012". The main content area is divided into two columns. The left column features a "Featured Article" section with a list of topics: "Important Technologies", "Distributed Healthcare", and "Improved Reliability". Below this is another "Featured Article" section with a video thumbnail of Olaf Such, PhD, MBA, and a "View The Video!" link. The right column contains a "Welcome, Readers!" message and a "Important Bioengineering Technologies of the Next Decade - Part 1" article by Atam Dhawan, with a brief description of the report's content.

- LS Newsletter launched April 9
  - ✓ [April 16 Press Release](#)
  - ✓ [New issues in May, June, July, August, September](#)
- After inaugural issue
  - ✓ 110% increase in LS Portal unique visitors
  - ✓ 80% increase in LS Portal page views
- Currently 600+ subscribers

# Life Sciences e-Journal

- Planned for 2014 launch
  - 'IEEE Emerging Topics in Life Sciences'
  - Open Access
- Dedicated to the timely publication of high quality manuscripts that apply methods of mathematical/statistical modeling/analysis to biological problems at the molecular, cellular, organ, human and/or population levels







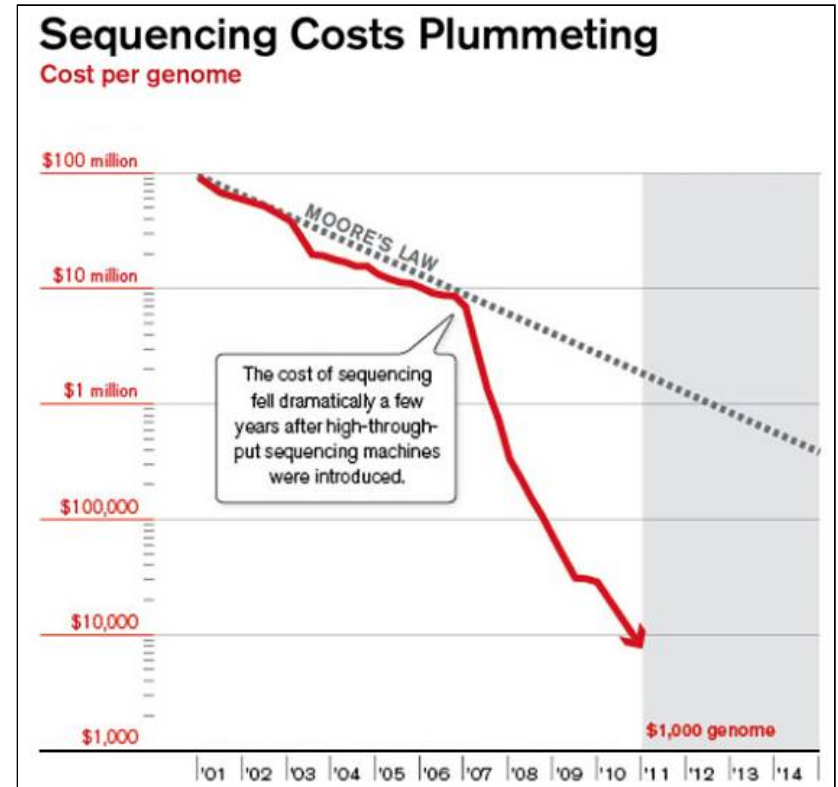
# Additional Welcoming Comments

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# Life Sciences: A quick scan

- **The pace of technology is quickening...**
  - Convergence
  - Reverse Innovation
  - Competition
  - Our Shrinking Planet



# Today: Grand Challenges

## ■ **Process?**

- Challenges – then roadmaps?
- Meetings: Regional or Global?

## ■ **Forget the easy questions**

- Consider those for which the 5-10 year outlook is: *No known solution*
- What areas of technology MIGHT provide answers

## ■ **Let us begin!**