

# State of the Society

December 2013

**K. J. Ray Liu, President**

**IEEE Signal Processing Society**

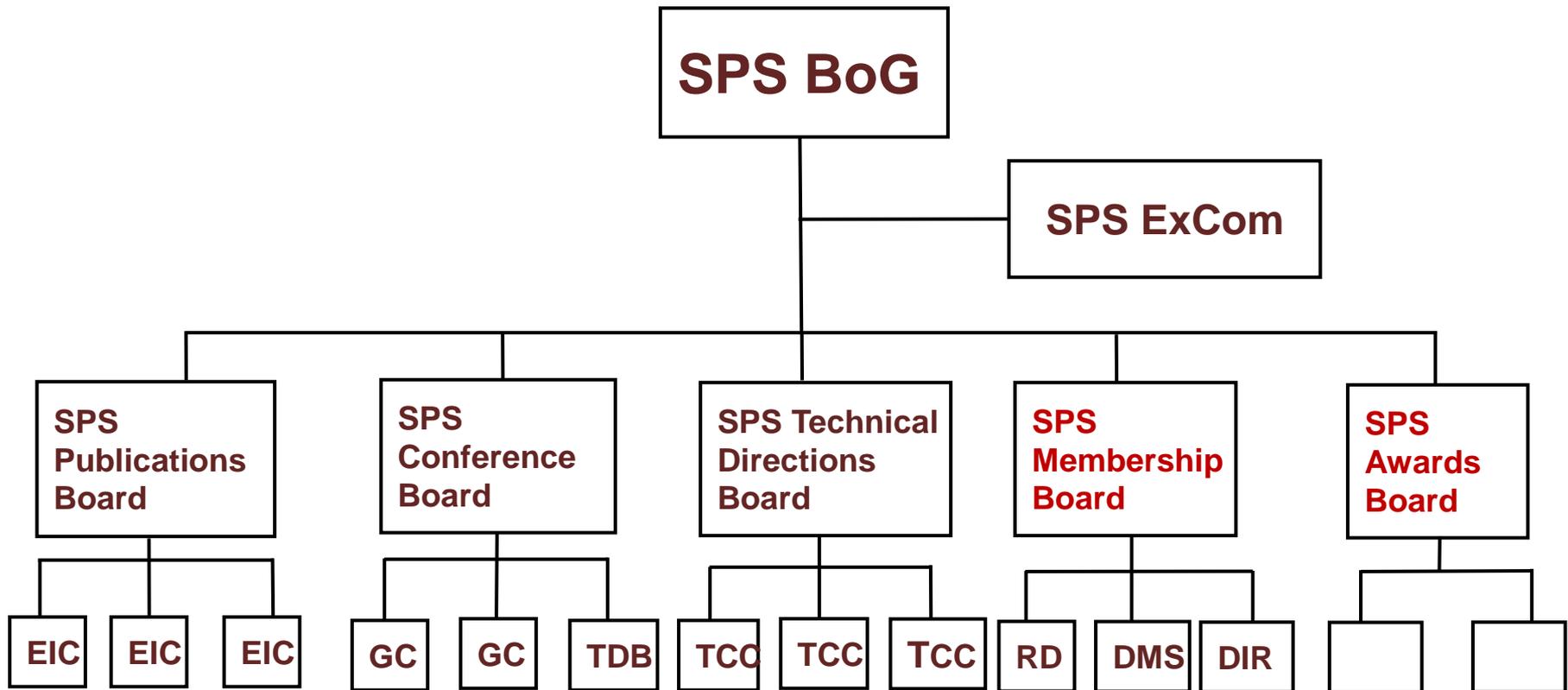
IEEE Global Conference on Signal and Information Processing (GlobalSIP), 2013, Austin, TX

# What's New? ... A lot!

- New Organizational Changes
- New Awards
- Membership Growth
- New Educational Activities
- New Conferences
- New Journals
- New Initiatives

... All bring New Challenges!

# IEEE Signal Processing Society (SPS) Organizational View



# Recent Organizational Changes

- **Separation of Membership and Award Boards**
  - New Vice President–Membership
  - New Award Board Chair: a non-voting BoG member
  
- **President-Elect will be Society Treasurer from 2015**
  - Will replace the position of Vice President-Finance
  
- **New election process for President-Elect:**
  - Presentation of candidates, discussion, and vote during annual BoG meeting at ICASSP

# Newly Elected in Leadership

- President-Elect:  
Rabab K. Ward  
(Univ. of British Columbia)
- Vice President–Membership:  
Kostas Plataniotis  
(Univ. of Toronto)
- Award Board Chair:  
José M. F. Moura  
(Carnegie Mellon Univ.)



# New Society Staff

## ■ Executive Director - Rich Baseil

30+ years industry experience in engineering and management at Bell Labs, Bellcore, Telcordia Technologies, Cisco, MITRE, RAND. Part-time teaching adjunct at NJIT.



## ■ Senior Manager, Conferences and Publications - Denise Hurley

17+ years with the IEEE. Worked within the Technical Activities Finance Group on the Society/Council budgets, finances and support for the TAB Finance Committee.



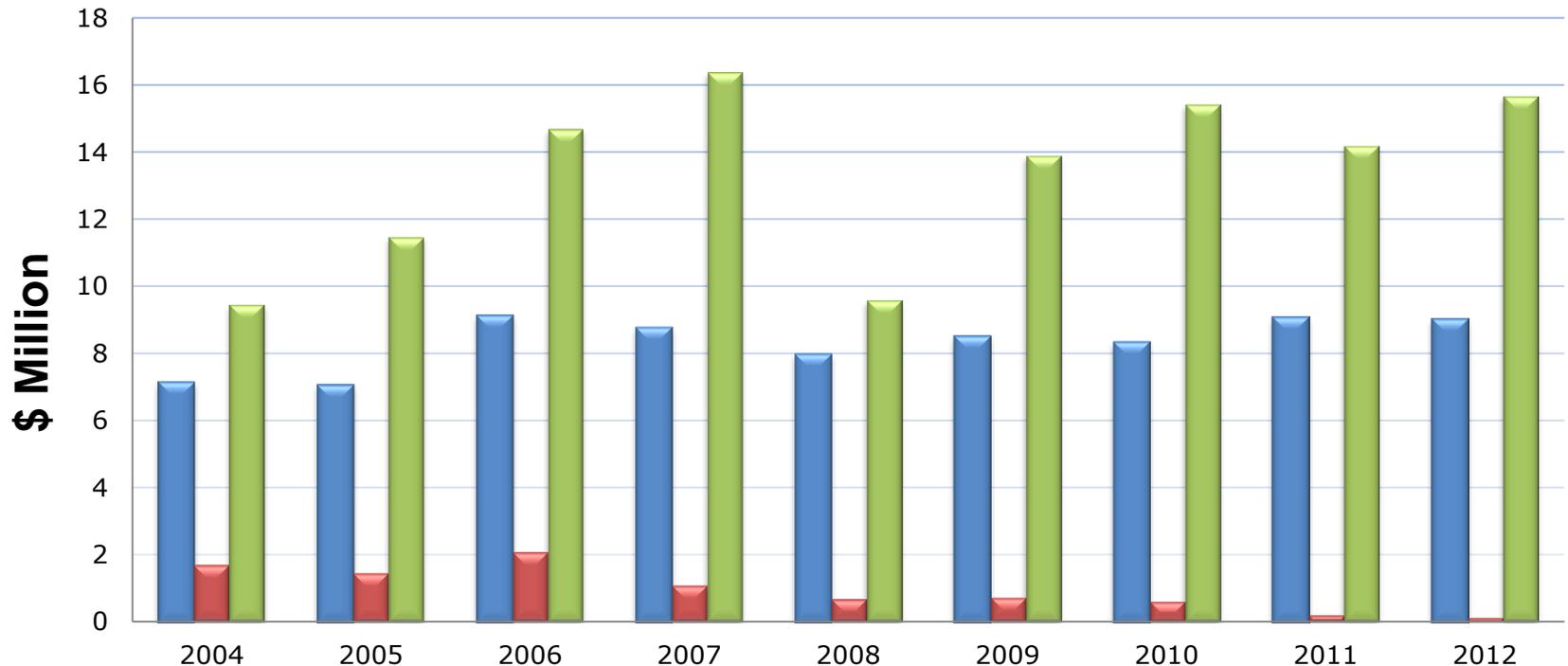
# Awards Board: An Update

- Change of award nomination process
  - Accept nominations from all boards, committees, and individuals
- Change of award selection process – Awards Board will vet on all nominations
- No board/committee can nominate its own members in order to minimize potential conflict of interests ...

# SPS Awards

- IEEE Jack S. Kilby Signal Processing Medal (est. 1995)
- IEEE James A. Flanagan Speech and Audio Processing Technical Field Award (est. 2002)
- IEEE W.R.G. Baker Prize Paper Award (2011)
- IEEE Jean-Baptiste Fourier Technical Field Award for Signal Processing (newly approved)
  
- Society Award
- Technical Achievement Award
- Education Award
- Meritorious Service Award
- Best Paper Award
- Overview Paper Award (2013 submitted for approval)
- Signal Processing Letters Best Paper Award (newly approved)
- Signal Processing Magazine Best Paper Award
- Signal Processing Magazine Best Column Award
- Sustained Impact Paper Award (2013 submitted for approval)
- Young Author Best Paper Award

# SPS Budget and Finance

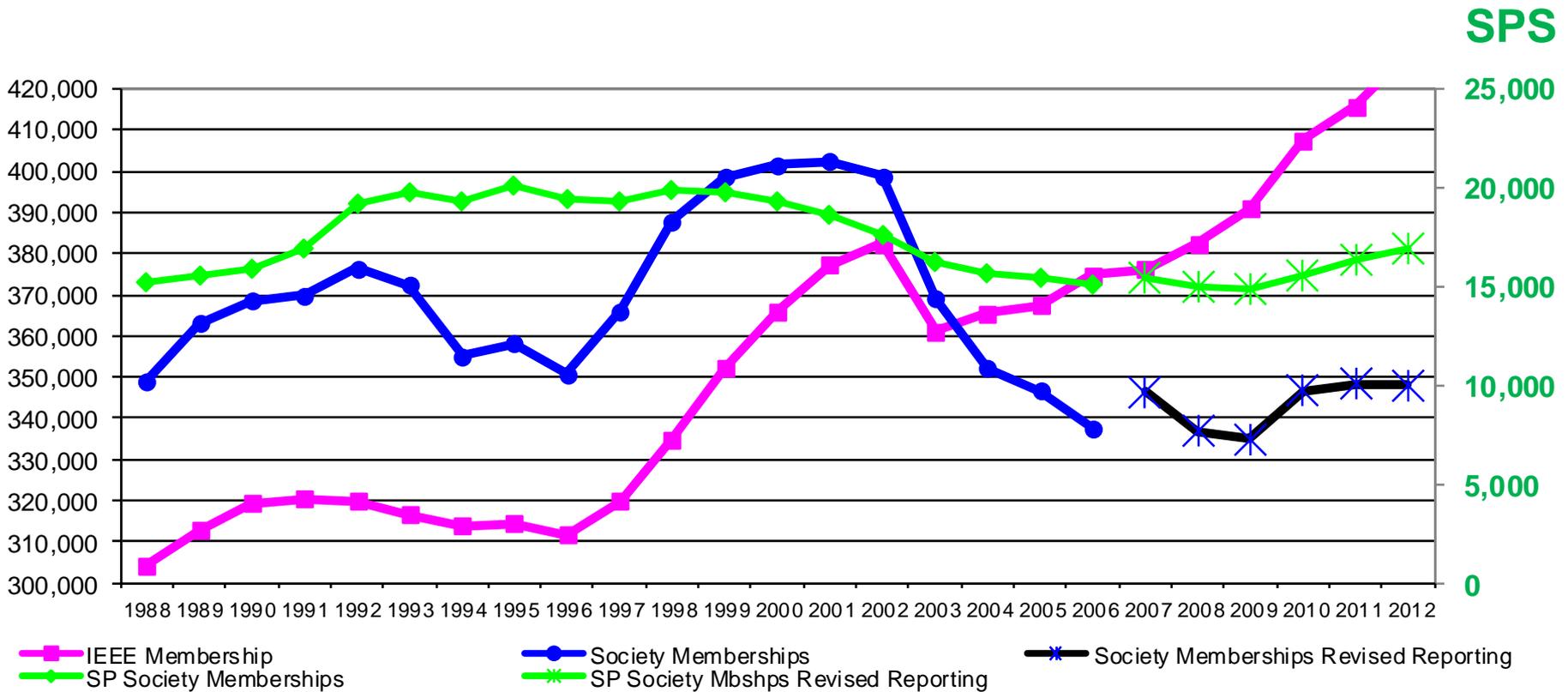


	2004	2005	2006	2007	2008	2009	2010	2011	2012
Operation Income	7.13	7.04	9.11	8.75	7.96	8.49	8.32	9.05	9.00
Operation Surplus	1.68	1.44	2.06	1.08	0.683	0.723	0.608	0.202	0.124
Reserves	9.46	11.47	14.68	16.37	9.59	13.89	15.41	14.18	15.65

('12 FM-13 per March 2013)

# Memberships: Long Term Trends

IEEE/Total Society Memberships/SP Society (Dec. 1988-2012)



**Note:** Effective 2007, Society membership totals appear higher as a result of a change implemented in the way current memberships are counted. Memberships cancelled during renewal (Sept-Dec) for the following membership year are counted in current year end totals. In prior years, these non-renewing members were not included in totals. Effective 2008, Society membership totals reflect a decline of 9,405 memberships which included the cancellation of approx. 6,000 Engineering Management Society memberships due to the Society's conversion to a Council. Decline also includes loss of 3,000 Computer Society affiliates.

# Seasonal Schools (Carlo Regazzoni)

- **Main objective** of Seasonal Schools in Signal Processing (**S3P**) Program (established in 2010)
  - Membership development for students with interests in signal proc. [www.signalprocessingsociety.org/community/seasonal-schools/](http://www.signalprocessingsociety.org/community/seasonal-schools/)

## ■ Completed Seasonal Schools:

Dates	Location	Topics
June 8-14, 2013	<b>Croatia</b>	"Biomedical Image Processing and Analysis"
Sept. 3-6, 2012	<b>Turkey</b>	"Game Audio"
Aug. 20-24, 2012	<b>UK</b>	"High Performance DSP & FPGA implementation of SP Systems"
July 2-6, 2012	<b>Australia</b>	"Social Media Processing"
July 2-6, 2012	<b>Taiwan</b>	"Compressive Sensing and MIMO Signal Proc. Systems"
Jan. 16-20	<b>Greece</b>	"Speech and Audio Processing for Immersive Environments and Future Interfaces"
Sept. 3-7, 2011	<b>Austria</b>	"Networked Embedded Systems"
July 4-8, 2011	<b>Taiwan</b>	"3D & High Definition/High Contrast Video Proc. Systems"
Aug.-Sept. 2010	<b>Netherlands</b>	"Models for Embedded Signal Processing Systems"

# SigView (John McAllister)

- **SigView** ([www.sigview.org](http://www.sigview.org)) is an online video library, which is an open benefit for all SPS members, allowing you to create, host, link and distribute videos of talks, lectures, tutorials or any other media.
- It has been officially approved as a standalone SigView editorial board with Chief Editor John McAllister.



Keeping up-to-date with social media



IEEE Signal Processing Society Group



[www.facebook.com/ieeeSPS](http://www.facebook.com/ieeeSPS)

@SPSotl

# ChinaSIP (Min Wu)



- A new SPS **regional conference in China** as a unique outreach platform
  - Help colleagues in China engage with global community
  - Offer global colleagues opportunities to network and develop international collaborations
- **1<sup>st</sup> ChinaSIP** was launched in July 2013 in Beijing
  - Technical sessions, complemented by summer school, plenary & invited talks, professional development panels & industry panel
  - About 300 attendees, <http://www.chinasip2013.org/>
- **2<sup>nd</sup> ChinaSIP** will be held in Xi'an July 9-13, 2014
- **ChinaSIP** Technical Interest Groups
  - Provide review workforce and quality assurance for the conf.
  - Facilitate technical community building in China

# SigPort (Min Wu)

- “**Signal/Info Processing Technical Report Repository**”
  - An online archive of manuscripts, reports, student thesis and supporting materials.
- Provide an **early citable access** to reports that users wish to share with **time-stamp**
  - Complement formal publication in conf./journals with EDICS
  - Authors retain copyright and free to submit for publication
  - Possibly serve as pre-submission to formal publications
  - Moderate fee to ensure sustainable archiving
- **Phase-1 Pilot** development plan is underway
  - It is to be approved as a standalone SigPort editorial board.
  - Expect to launch a trial in 2014

# Student Services (Kenneth Lam)

## ■ Student Career Luncheon:

- A new activity organized for students and companies to meet
- Jointly work by the *Student Services Committee* and the *Industrial Relations Committee* as a regular feature at ICASSPs
- The first Luncheon was held at ICASSP 2013 on May 30
- 150 students/fresh graduates and about 50 people from 14 companies registered to attend the event

## ■ “Signal Processing Cup” Competition for Students

- Opportunity for grad & undergrad students to form teams and work together to solve a challenging and interesting real-world problem using signal processing techniques and methods.
- Sponsored by MathWorks with cash and softwares!

- **IEEE SPS Travel Grants:** The committee is responsible for selecting travel grantees to attend ICASSP and ICIP.

<http://www.signalprocessingsociety.org/membership/sps-travel-grants/>

# Industrial Relations (Mazin Gilbert)

## ■ **Ambassador Program**

- identifying ambassadors representing each company
- to establish programs, courses, and events that are of value to the companies
- started recently with a LinkedIn page and 25 ambassadors

## ■ **Emerging Signal Processing Applications (ESPA) Conference**

- Held in 2012
- Consider to hold again in 2015

# WIKI Project (Douglas Williams)

- Wikipedia has become one of the most widely-used resources on signal processing
  - Nyquist–Shannon sampling theorem page **is viewed on average 1000x a day**
  - Editing of a Wikipedia article can easily exceed the impact and visibility of writing a paper

## Wikipedia Workshop at ICASSP

- Friday, May 31, immediately followed special session SS-L8, “Signal Processing Education in the Internet Age”
- Workshop offered a primer on how one can meaningfully contribute to improving SP articles on Wikipedia
- Discussed an action plan of a “Wiki project on Signal Processing” with volunteers working together to improve SP articles on Wikipedia:  
[http://en.wikipedia.org/wiki/Wikipedia:WikiProject\\_Signal\\_Processing](http://en.wikipedia.org/wiki/Wikipedia:WikiProject_Signal_Processing)
  - Participants were ask to think of specific (types of) articles that may require improvement and articles they could help to improve

# The Big Five IEEE Societies

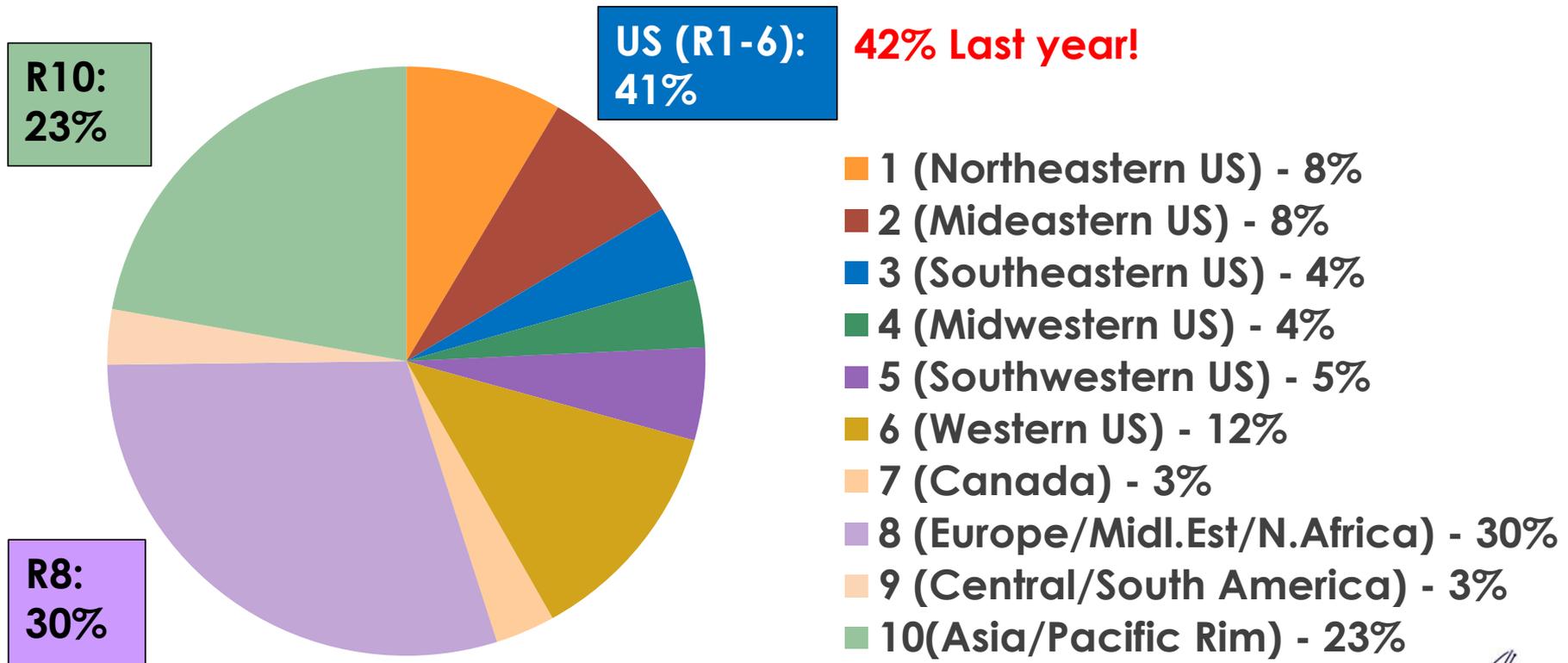
	Members	Undergrad Students	All (with Affiliates)
Computer	50,481	4,258	67,848
ComSoc	44,305	5,298	50,702
Power	28,019	2,156	30,479
<b>SPS</b>	16,326	<b>454</b>	<b>16,957</b>
Microwave	11,537	355	11,939

- Reversed the downward trend and started to grow!
- SPS is the largest society without its own division!

(Dec 2012 data)

# SPS Members by Region

- 4th largest technical society in the IEEE
- Approximately 17,000 members



# SPS Publications: Page Budgets

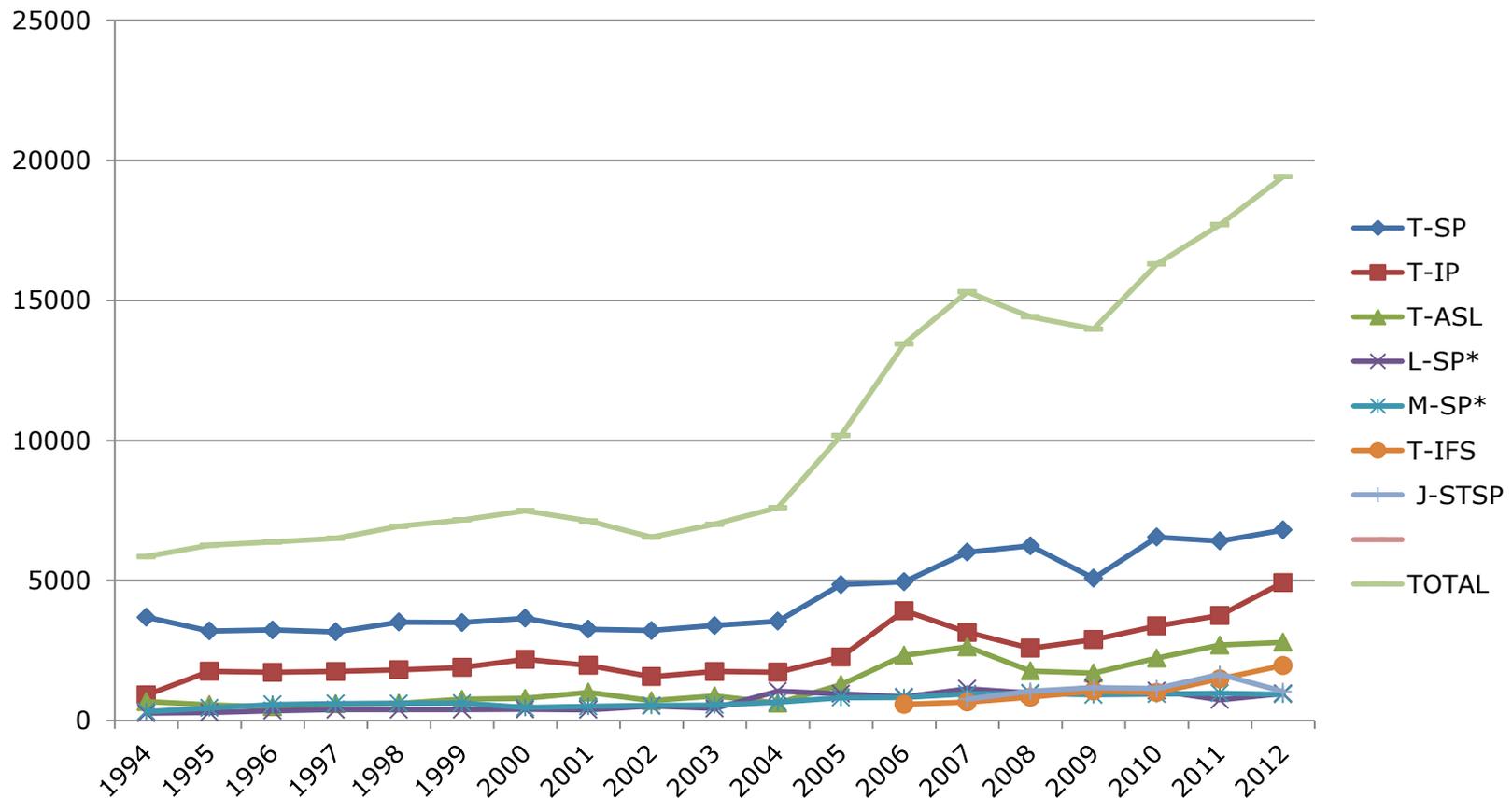
Trans. on Audio →  
 Trans. Audio & Electroacoustics →  
 T-ASSP → T-SP

Year	Pages
1967	202
1970	527
1980	773
1990	2,200
2000	3,652
2009	5,080
2012	6,804

In total, over **19,423** pages published in 2012!

Other SPS Pubs in 2012	Pages
Trans. on Audio, Speech and Lang. Proc. (since 1993)	2,796
Trans. on Image Proc. (since 1992)	4,924
Trans. on Info. Forensics and Security (since 2006)	1,967
SP Letters (since 1994)	964
Journal of Selected Topics in SP (since 2007)	1,032
SP Magazine (since 1984)	936

# Published Pages (1994-2012)



# SPS Publications

	Impact factor	Year 2012 Ranking
Trans. on Medical Imaging	4.027	8
Signal Processing Magazine	3.368	15/242 in EE
Journal of Selected Topics on SP	3.297	16
Trans. on Image Processing	3.199	17
Trans. on Signal Processing	2.813	25
Trans. on Wireless Comm.	2.418	34
Trans. on Mobile Computing	2.395	14 (CS-Info Sys)
Trans. Info Forensics and Security	1.895	54
Trans. on Multimedia	1.754	15 (CS-Software Engr.)
Trans. on Audio/Speech/Lang.	1.675	71
Signal Processing Letters	1.674	72

# New Journal Activities

## ■ Proposed new journals

- IEEE Trans. on Computational Imaging (Bouman)
- IEEE Trans. on Signal and Information Processing over Network Systems (Djuric)

## ■ Financial Co-Sponsored journals

- IEEE Trans. on Cognitive Communications and Networking (20%)
- IEEE Trans. on Big Data (7.5%)
- IEEE Journal on Biomedical and Health Informatics (15%)

## ■ Technical Co-Sponsored journals

- IEEE Internet of Things Journal
- IEEE Trans. on Cloud Computing
- IEEE Cloud Computing Magazine
- IEEE Trans. on Network Science & Engineering
- IEEE Trans. on Molecular, Biological, and Multi-Scale Communications
- IEEE Trans. on Computational Social Systems
- IEEE Life Science Letters

## ■ Existing Co-Sponsored Journals

- IEEE Trans. on Multimedia (25% → 50%)
- IEEE Trans. Medical Imaging (15% → 35%)

# New Journal Activities

## ■ Merger with ACM

- The IEEE Transactions on Audio, Speech, and Language Processing and the ACM Transactions on Speech and Language Processing will be published jointly as the *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, starting January 2014

## ■ Signal Processing Letters

- The format for the IEEE Signal Processing Letters changed from four pages to **four pages, plus one page for references only**, following the change in the format for conference paper submissions.

# SPS Conferences

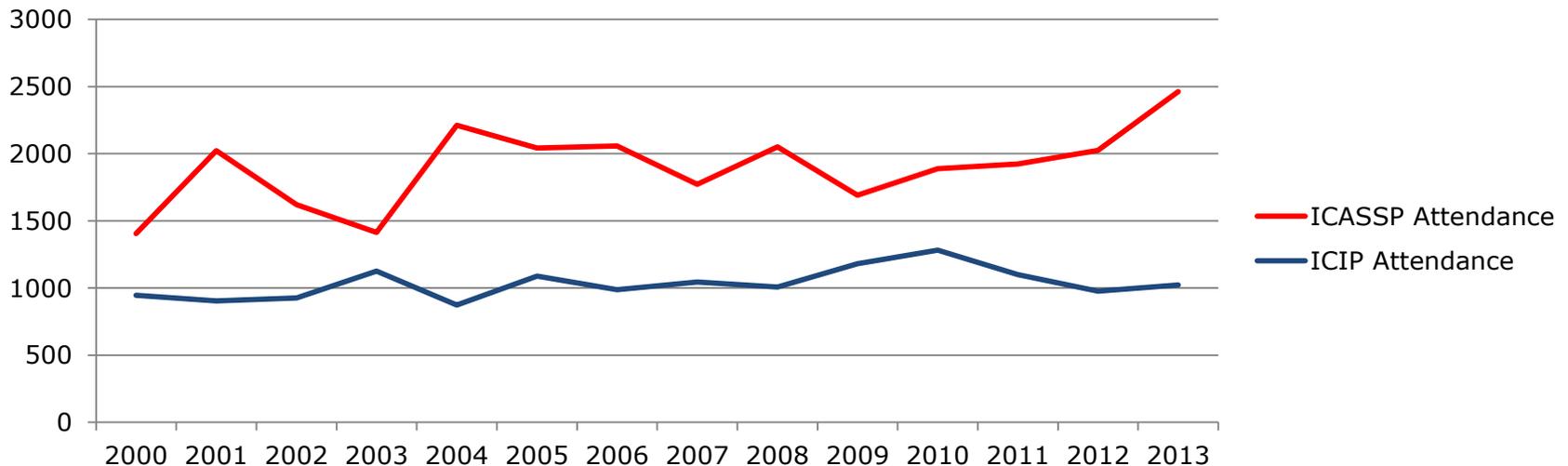
## IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP):

- Florence – 2014
- Brisbane – 2015
- Shanghai – 2016
- New Orleans, LA – 2017
- **Seoul, South Korea** – 2018

## IEEE International Conference on Image Processing (ICIP):

- Paris – 2014
- Quebec City – 2015
- Phoenix – 2016
- **Beijing, China** - 2017

# ICASSP and ICIP Attendance



Year	ICASSP Locations	ICIP Locations
2000	Istanbul, Turkey	Vancouver, Canada
2001	Salt Lake City, UT	Thessaloniki, Greece
2002	Orlando, FL	Rochester, NY
2003	Hong Kong	Barcelona, Spain
2004	Montreal, Canada	Singapore
2005	Philadelphia, PA	Genova, Italy
2006	Toulouse, France	Atlanta, GA
2007	Honolulu, Hawaii	San Antonio, TX
2008	Las Vegas, NV	San Deigo, CA
2009	Taipei, Taiwan	Cairo, Egypt
2010	Dallas, Texas	Hong Kong
2011	Prague, Czech Republic	Brussels
2012	Kyoto, Japan	Orlando, FL
2013	Vancouver, BC, Canada	Melbourne, Australia *budgeted attendance

# GlobalSIP: A New Flagship (Ahmed Tewfik)

- New **symposia based** conference
  - Focused on current and emerging sig. proc. theoretical foundations and applications
- **Goals:** Emphasize interdisciplinary research with promising impact
  - Attract new audiences **beyond** ICASSP/ICIP/ISBI/ICME
- Launch: Austin, TX, 3-5 December 2013
- Next: Atlanta, GA, 1 December, 2014
- Eighteen symposia:
  - **Theoretical foundations:** graph signal processing, network sensing, low dimensional models, sensing and inference, network theory
  - **Applications:** bioinformatics, neural engineering, mobile imaging, cyber security, finance, cognitive radio, green communications, smart grid, millimeter wave imaging



# New Conference Policies

- Papers submitted to the Society's solely owned conferences and workshops can have 4 pages of text plus a **5th page for references.**
- IEEE Signal Processing Letters published papers can be presented at ICASSP or ICIP.

# Technical Committees: Then and Now

## Year 1976

- Digital signal processing
- Digital measurement of noise
- Electroacoustic transducers
- Speech processing
- Underwater acoustics

## Year 1987

- Audio and electroacoustics
- Digital signal processing
- Multidimensional signal processing
- Spectral estimation and modeling
- Speech processing
- Underwater acoustics
- VLSI for signal processing

## → Evolved and Broadened Scope of Signal Processing

## Year 2013

- Audio and electroacoustics
- Bio imaging and signal processing
- Design and implementation of signal processing and systems
- Image, video, and multidimensional signal processing
- Information forensics and security
- Machine learning for SP
- Multimedia SP
- Sensor array and multichannel
- SP for communication and networking
- SP theory and methods
- Speech and language processing
  
- Industry DSP technology
- Signal processing education

# Creation of Special Interest Group (SIG)

- Provisional groups that are created to quickly **address emerging technical areas**,
- With a life-span of up to **three** years.
- **subject to a review** by the TC Review Committee to determine to continue, become a TC, or be disbanded.
- The **VP-Technical Directions** shall identify emerging areas and create and receive proposals for Special Interest Groups, with approval by EXCOM.

# TCs and Affiliated Community

TC	ICASSP 2013 Submissions	ICASSP % of Submissions	Affiliates	Affi (%)	Affi/Sub
AASP	354	10.6%	72	7.2%	0.69
BISP	164	4.9%	36	3.6%	0.73
DISPS	100	3.0%	47	4.7%	1.57
IFS	93	2.8%	102	10.3%	3.68
IVMSP	479	14.3%	125	12.6%	0.88
IDSP	33	1%	8	0.8%	0.8
MMSP	74	2.2%	137	13.8%	6.27
MLSP	196	5.9%	77	7.8%	1.32
SAM	217	6.5%	86	8.7%	1.34
SL	764	22.8%	63	6.4%	0.28
SPCOM	387	11.6%	168	17.0%	1.47
SPTM	479	14.3%	70	7.0%	0.49
<b>Total</b>	<b>3346</b>		<b>882</b>		

# SPS Chapters



There are about 135 SPS chapters worldwide.

# Challenges Ahead

## ■ **Publication**

- Reducing revenues due to IEL distribution
- Further improve quality, impact factors
- TSP/TIP too thick? More new topical journals?

## ■ **Membership**

- Create more values and benefits
- Outreach to emerging regions

## ■ **Finance**

- More services and programs – more expenses!
- Create more new products and models?

# Challenges Ahead

- **Conference:**
  - How to support regional activities?
  - Balance between US and international
- **Technical Activities:**
  - Build a strong sense of community in TCs
  - Timely embrace new emerging topics
- **Society:**
  - **Awareness/Visibility in the public at large**

Foresee the future and position ahead!

# Awareness/Visibility ad hoc Committee

- EXCOM formed a SP Awareness Committee consists of EXCOM members and some invited guests, chaired by President.
- A content team was chaired by Fred Juang, and the other media team was chaired by Charlie Bouman.
- Conference calls on Sep 24 and Nov 12, and a face-to-face meeting on Dec 5.
- Developing objectives/goals, and actionable plans.

# Volunteering Opportunities

- Review papers for journals/conferences
- Become part of the editorial boards  
(appointed by Journal's editors-in-chief; vetted by Pub Bd)
- Organize conferences and seasonal schools
- **Propose tutorials for online education program**
- Get involved in technical committees
  - Practically any SPS member and even some non-members can become Affiliate Members (non-elected, non-voting members) of a particular TC
- Volunteer for elected leadership positions
- ...

# Where to Find This Talk?

- Go to IEEE Signal Processing Society at <http://www.signalprocessingsociety.org/>
  - Under “About SPS”, see “State of the Society”
- SPS website is **now faster...!**

# What Can We Do for You?

- **President:** K. J. Ray Liu
- **President-Elect:** Alex Acero
- **Vice President-Awards and Membership:** John Treichler
- **Vice President-Conferences:** Wan-Chi Siu
- **Vice President-Finance:** Alex Kot
- **Vice President-Publications:** Mari Ostendorf
- **Vice President-Technical Directions:** Charles Bouman

