Journal Report to the SAS Executive, EAB and Publications Committee

August 29, 2014

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We begin this report by thanking all the people who have helped us to publish Applied Spectroscopy over the past year, the authors and reviewers, the associate editors and various special section editors, Jonell Clardy who produces the stunning covers and Focal Point graphics, the advertising team at TPM and Elana in the Editorial Office. Our sincere thanks to all of you. Thanks also to the SAS Office and Executive Committee for supporting the journal and the EIC, Editor, and Managing Editor.

Overview

In general, there have been no significant changes in the editorial guidance of the journal although there have been some initiatives that will certainly have an impact in the coming years. Perhaps the most important of these is that we have shifted the journal to a hybrid open access model, i.e., a subscription journal for which some of the articles are available as (Gold) open access. The open access "movement" continues to gain momentum and it is important that we provide authors with the option to publish in this manner. This model allows us to publish papers submitted by authors who are funded by agencies that provide publication funding for the work to be available on an open access basis from the time of publication. This shift does not affect peer review or the "front-end" handling of the submitted manuscript. In theory it provides an additional revenue stream but we do not expect a large uptake so its effect will probably be minimal, at least in the near future. Additionally, the society have been using open access publishing with Focal Point articles to fulfill its mandate to "…advance and disseminate knowledge and information concerning the art and science of spectroscopy and other allied sciences." A side benefit of this strategy is that it increases our market exposure and visibility by introducing the journal to non-subscribers and non-members.

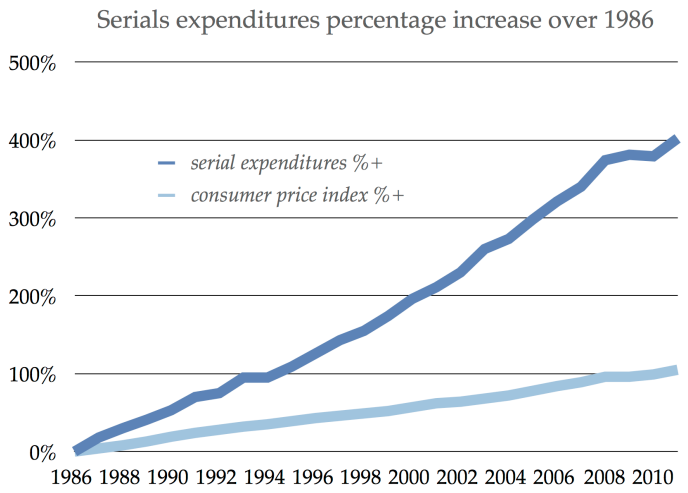
The journal and, because of the close relationship, the society, continues to be confronted with some significant challenges, most of which are being dictated by market forces and the changes that on-line internet access has brought to the business of scholarly publishing.

> " with the availability of Internet technology, a new strategic barrier has emerged. Major publishers have begun offering libraries bundled packages that librarians have dubbed the " Big Deal. " The bundles are across journals and across print and electronic versions. The exact terms vary, but in a typical Big Deal contract a library enters into a long-term arrangement to get access to a large electronic library of journals at a substantial discount in exchange for a promise not to cut print subscriptions (the prices of which will increase over time). In this sense print and electronic are bundled. Because the electronic library becomes much cheaper when ordered in quantity (such as " all remaining math journals "), there is likewise bundling across electronic journals." - From "EXCLUSION OR EFFICIENT PRICING? THE "BIG DEAL" BUNDLING OF ACADEMIC JOURNALS, Aaron S. Edlin Daniel L. Rubinfeld, *Antitrust Law Journal, Vol. 72, No. 1, 2004*.

In the face of static library budgets and increasing journal prices for subscription journals, which have, on average, been increasing at a rate of about 6-10% per year (See Figure 1), subscription libraries are under

continual pressure. To cope, libraries have been accepting the "Big Deal" and have been cutting subscriptions at the periphery.

Figure 1: Price Increases for serials since 1986. (Source: http://blogs.law.harvard.edu/pamphlet/2013/01/29/why-open-access-is-better-for-scholarly-societies/)



This has impacted the viability of small, non-profit societies:

> "Since bundle size governs market power, non-profits have less ability to grow margins and scholarly societies rightly complained that they're being squeezed. From the point of view of libraries, if you have to cancel something you can recoup revenue if you cancel the journals from a small publisher. You can't recoup revenue if you cancel journals from the large commercial publishers. As a library, what are you going to do? Cancel scholarly society journals, just as the societies have been rightly complaining about.
>
> But notice that the problem that scholarly societies face, a problem that will only increase in a status quo future, is based not on open access but on *inherent properties of the subscription market that they participate in*. For scholarly societies, the status quo is not a good alternative. Doing nothing is a failing strategy."
> - Stuart M. Shieber, http://blogs.law.harvard.edu/pamphlet/2013/01/29/why-open-access-is-better-for-scholarly-societies/

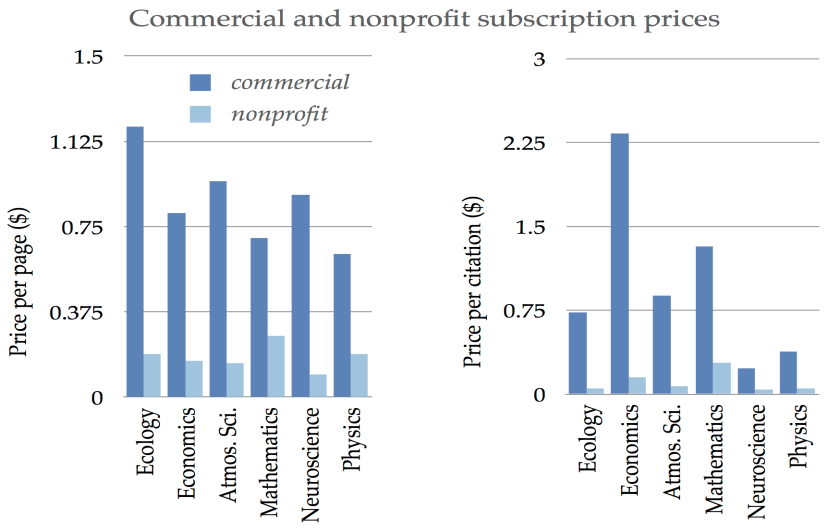
To some extent the association with OSA represents some protection for Applied Spectroscopy in this big deal marketplace, but the price that the society has paid is in reduced revenue due to profit sharing. It's difficult to know whether the OSA deal protected erosion of our subscriptions and preserved society revenue or whether it transferred subscriptions from the SAS base and eroded society revenues in the process.

A recent report by Bergstrom and Bergstrom, http://octavia.zoology.washington.edu/publishing/pageprice_table.html) points out what Schieber terms

"inefficiency" in the journal market that has created "wide price disparities." See Figure 2 below. The dark blue is for commercial publishers, primarily Elsevier, Wiley, Taylor and Francis, Springer and SAGE, and the light line is for non-profits, like the ACS, Royal Society, and the SAS. The graph clearly shows that for-profit publishers are charging, on average, on the order of five times more for their journals than non-profit publishers.

The right side of the graph presents the same data cast in terms of a quantity that, arguably, represents the quality of the journal – citations (the underlying basis for calculating impact factors). Shieber observes about the disparity, "This kind of price differential is a clear sign of market failure, especially as it has been sustained over decades. You just do not get this kind of price disparity preserved over long periods of time in well functioning markets."

Figure 2.



Put another way the for-profit publishers are price gouging. This should provide journals like Applied Spectroscopy with a marketing advantage but there are barriers that need to be overcome to exploit this advantage, the "Big Deal" and the perception of quality measured by impact factor being the most significant of these. More on this in the impact factor section later in this report.

Regarding pricing, a publisher recently provided us with a price comparison for Applied Spectroscopy and related journals (Table 1). The immediate conclusion is that there is probably room for a price increase for Applied Spectroscopy, for example to bring it in line with the pricing for JAAS. Before we can do that however, we must provide authors to an improved platform for hosting their (our) content in our opinion. We have been recommending that the SAS shift from Ingenta to a more modern platform in several past reports.

Table 1: Competitor price analysis

Journal	Publisher	2014 combined rate	Annual extent	no. issues	price per issue	price per page
Applied Spectroscopy	Ingenta/Allen Press	$1,450.00	1536	12	$120.83	$0.94
Spectrochimica Acta Part B: Atomic	Elsevier	$5,272.00	2000	10	$527.20	$2.64
Journal of Raman Spectroscopy	Wiley	$11,187.00	1794	12	$932.25	$6.24
Vibrational Spectroscopy	Elsevier	$2,499.00	980	6	$416.50	$2.55
Applied Optics	OSA	$5,291.00	8863	36	$146.97	$0.60
Journal of Analytical Atomic Spectrometry	Royal Society of Chemistry	$3,694.00	1952	12	$307.83	$1.89
Spectrochimica Acta Part A: Molecular and Biomolecular SpectroscopySpectrochimica Acta Part A: Molecular and Biomolecular	Elsevier	$5,990.00	2667	17	$352.35	$2.25

The marketplace forces discussed above has also impacted operations of non-profit societies which are heavily dependent on journal revenue. The impact was nicely summarized in an article entitled "The New Face of the Professional Society" in "The Scholarly Kitchen", (http://scholarlykitchen.sspnet.org/2013/01/28/the-new-face-of-the-professional-society-2/):

> "Professional societies began their publishing ventures as a means for members to share their work with other like-minded individuals. Typically, members of a society paid a fee or dues, and among the benefits of membership was free or discounted access to the society's publication. Non-members, including institutions, paid a subscription fee for the journal, which ultimately gave rise to the situation we have today, where academic libraries' subscriptions vastly outstrip membership dues as a source of revenue for societies. When journals became digital and libraries granted remote access to authorized users, many society members stopped paying their membership dues because the journal was now available to them at no cost to them. While societies provide other benefits to members (discounted conference fees, policy work with government officials, public education), many societies today are facing a difficult problem of coming up with benefits that their members are willing to pay for."

The messages are clear. The society and the journal must adapt to the challenges outlined above in order to survive into the future. On the journal side, the society has empowered an ad-hoc committee, that includes the editorial team, to investigate alternative publishing models and/or publishing partners for Applied Spectroscopy. It is expected that a report of the recommendations of this committee will be available within a few months.

The remainder of this report is intended to provide a summary of journal operations and performance for 2013 and 2014 (to date). It consists mainly of tables of data and, in some cases figures, with some accompanying commentary where necessary.

The Editorial Office

In early December 2013, Joanne Jablkowski submitted her resignation (effective January 3, 2014) to move to a similar position with a medical journal. We advertised the position, interviewed five candidates, and, on December 24th offered the position to Elana Baxter who accepted the position. Elana trained with Joanne for two days in January and has been working as Editorial Assistant since January 2nd 2014. For the most part, the office has been functioning very smoothly since the transition without any major difficulties.

Journal Web page

Over the past year we have added Manuscript Submission FAQ, Ethical Guidelines, and Open Access Policy web pages to the https://www.s-a-s.org/journal/ web page. We continue to update issue information to the website on a monthly basis. In general, we have found that the inflexibility of the web page constrains the kind, and amount of information that we can provide which is a source of frustration for us.

Allen Track and Peer Track

The reader may recall last year we indicated that we would be switching from Allen Track to Peer Track for manuscript submission. Our reasoning was that Peer Track is a newer system powered by Editorial Manager (Aries), which is used by more than 5,000 publications from 200 scholarly societies, university presses and commercial publishers. The switchover took place in April 2014 after a short training period provided by Allen Press. However, after the submission of about 15 manuscripts we became bogged down. There were a variety of serious issues that held back implementation:

- We did not have access to full reviewer data base statistics and we couldn't do keyword searches of the previously established keyword data base
- The complexity of Peer Track and the lack of availability of certain functions that was available on Allen Track. It lacks an overview page that summarizes the status of all pending manuscripts. There is no easy way to track reviewer acceptance and declines. There appeared to be no function to re-issue an invitation to a reviewer who was ignoring a request.
- Information on past duties for reviewers, etc. was lost on the port of information from Allen Track.

In May and June we spent more time training on Peer Track and accepted another 10 manuscripts in June 2014, but we again became bogged down with difficulties outlined above. In July we made the decision to halt the transition to Peer Track and, as a result, we are using Allen Track only for all submissions again. In our opinion, *Peer Track has been a failed experiment!* It is apparent that the production component (ArticleTrack, quoted at $11,100.00) of PeerTrack is necessary for the smooth operation of the entire process, from peer review to production. We've had to push manuscripts through to production entirely outside of the system, which means we are missing important comments, metrics, and details.

Ingenta has updated their look but we continue to be unsatisfied with their hosting. Although there were some recent upgrades, the look and feel of the site has not changed in many years and the site is not capable of providing even rudimentary metrics for our authors nor for ourselves. We experience difficulties every month in uploading the XML content from Allen Track and the site is slow to respond on most accesses. Compared with a modern hosting platform like Highwire, Ingenta is not serving us well.

Open Access:

As was discussed in the introduction to this report in late 2013 we implemented a mechanism for gold open access submissions to Applied Spectroscopy. Our open access policy can be viewed at https://www.s-a-s.org/journal/OpenAccess/. In addition to the SAS sponsored Focal Points, journal has published two Gold OA manuscripts in 2014.

Gold OA:
Subsurface Raman Analysis of Thin Painted Layers
Conti, Claudia; Colombo, Chiara; Realini, Marco ;Zerbi, Giuseppe; Matousek, Pavel
APPLIED SPECTROSCOPY Volume: 68 Issue: 6 Pages: 686-691 Published: JUN 2014

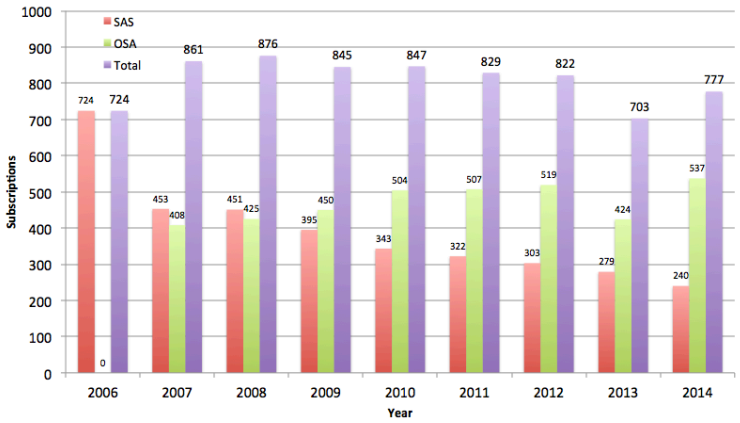
Millimeter-Scale Mapping of Cortical Bone Reveals Organ-Scale Heterogeneity
Buckley, Kevin;Kerns, Jemma G.; Parker, Anthony W.; Goodship, Allen E.; Matousek, Pavel
APPLIED SPECTROSCOPY Volume: 68 Issue: 4 Pages: 510-514 Published: APR 2014

Green OA:
Variation in the Transmission Near-Infrared Signal with Depth in Turbid Media. Nicola Kellichan, Alison Nordon, Pavel Matousek, David Littlejohn, Gary McGeorge. Applied Spectroscopy. 2013. 68(3): 383-387.

Subscription Information:

The figures below summarize the subscription data for the period 2006-2013 with the most up to date information for 2014 also provided. Since 2010 there has been a steady decline in total subscriptions. There has been a slight uptick in subscriptions for 2014, which is an encouraging sign. The most disturbing aspect of the overall decline since 2008 is that it has affected the subscription revenue that has also been declining since roughly 2009/10.

Figure 3: Subscription numbers for SAS and OSA, 2006-2014



Editorial Office Statistics:

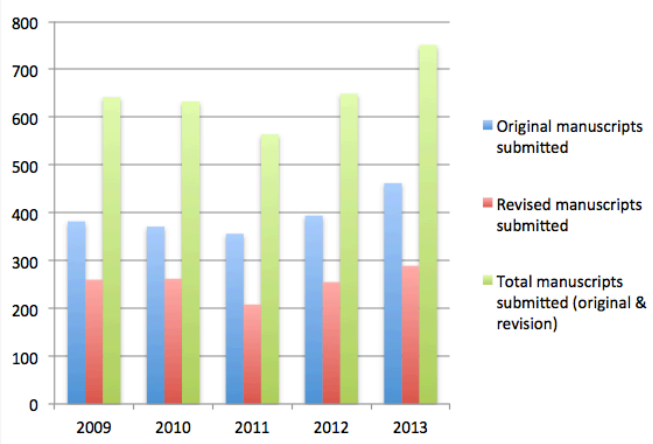
The table below (Table 2) has statistics on the manuscript flow for the years 2009-2014 (2014 is completed up to August 20, 2014). For 2012 there was a significant increase in number of manuscripts submitted relative to 2011, and 2013 saw a further significant increase. Fortunately in May 2013 the Editorial Assistant position was changed from 80% to 100% full-time to accommodate the increased workload. One can see form the data in the table and the graph below it (Figure 4) the submission load has increased by approximately 30% from 2011 to 2013. We are on track for a record year for 2014.

Note the rejection rate which has increased from ~ 43% in 2013 to ~56% in 2014 (to date). This is the result of two factors. First, while the number of submission is up significantly, for the most part, many of these have not been of the quality expected of an AS manuscript. Second, the Editors are applying a rigorous triage process, primarily based on novelty and the aims and scope, on submitted manuscripts (see: Rejected without review) so as not to pass along an increased load to associate editors and reviewers.

Table 2: Manuscript submission statistics

	2009	**2010**	**2011**	**2012**	**2013**	**2014**	2014 on track
Original manuscripts submitted	382	371	356	394	462	276	473
Revised manuscripts submitted	260	262	208	255	289	153	262
Manuscripts accepted without revision	7	7	14	13	8	6	10
Return with Revisions	201	223	206	227	227	120	206
Manuscripts rejected	123	124	109	137	184	150	257
Rejected with review	66	86	80	82	83	74	127
Rejected without review	57	38	29	55	101	66	113
Rejected after revision	9	15	9	15	12	10	17
Rejection Rate (%)	34.3%	34.6%	31.8%	38.5%	43.1%	56.2%	56.2%
Manuscripts requiring additional revision	65	54	37	63	71	32	55
Manuscripts accepted after revision	224	224	179	220	243	135	231
Manuscripts withdrawn	23	13	13	38	35	9	15
Original manuscripts not withdrawn	359	358	343	356	427	267	458
Total manuscripts submitted (original & revision)	**642**	**633**	**564**	**649**	**751**	429	735
Total papers published	196	200	177	177	188		
Breakdown of Paper Type	**2009**	**2010**	**2011**	**2012**	**2013**		
Focal Point	3	3	9	10	8		
Accelerated Papers	4	4	0	0	3		
Submitted Papers	166	179	156	144	156		
Spec Techs	11	6	4	12	7		
Notes	11	8	8	11	10		
Total manuscript pages published	1442	1452	1440	1491	1484		

Figure 4: Manuscript Submission (closely related to Editorial Office work load) graphical summary.



Impact Factor and citation statistics:

Good news! Our impact factor (IP) is up for 2013—the highest in five years!

Figure 5: Impact factor 2009-13 (Source: ISI Web of Knowledge Journal Citation Reports)

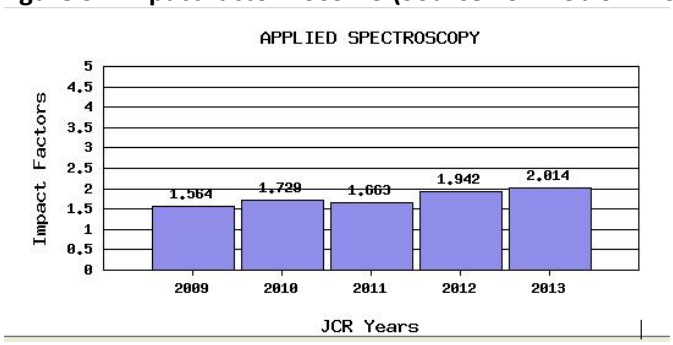


Table 3: Impact factor for a number of related journals from 2006 to 2013. The % change row is for 2013 relative to 2012.

Impact Factor by Year											
	Anal Chem.	Anal Chem Acta	Analyst	Talanta	Anal Bioanal	JAAS	JRS	SAA	Appl Spec.	Vib Spec	SAB
2006	5.646	2.894	3.198	2.810	2.591	3.630	2.133	1.270	1.879	1.88	3.092
2007	5.287	3.186	3.553	3.374	2.867	3.269	3.514	1.511	1.902	1.78	2.957
2008	5.712	3.146	3.761	3.206	3.328	4.028	3.526	1.510	2.062	1.81	2.853
2009	5.214	3.757	3.272	3.290	3.480	3.435	3.147	1.566	1.564	1.931	2.719
2010	5.874	4.311	3.913	3.722	3.841	4.372	3.137	1.77	1.729	2.083	3.552
2011	5.856	4.555	4.23	3.794	3.733	3.22	3.087	2.098	1.663	1.65	2.876
2012	5.695	4.387	3.969	3.498	3.659	3.155	2.679	1.977	1.942	1.747	3.141
2013	5.825	4.517	3.806	3.511	3.578	3.396	2.519	2.129	2.014	1.547	3.150
change	0.130	0.130	(0.163)	0.013	(0.081)	0.241	(0.160)	0.152	0.072	(0.200)	0.009
% change	2.22	2.85	(3.85)	0.34	(2.17)	7.48	(5.18)	7.24	4.33	(12.12)	0.31

While the increase in Impact Factor is a positive sign we must sound a note of caution. The table below shows

a re-analysis of the IP data for Applied Spectroscopy. The last column is the Impact Factor calculated with Focal Points excluded from the calculation. One can see how important the Focal Point articles were to the impact factor calculation for 2013. Further one can see that the submitted papers alone are being cited at a rate that is very concerning and that the Focal Point citations are driving the increase in IP.

If we want to get the impact factor up substantially we need to reject more papers that are of minimal interest to the Applied Spectroscopy readership, encourage submission of more potential high impact papers, and publish more high quality reviews to further drive citations. If we can get the Impact Factor above 3 then some sort of self-sustaining mechanism should kick in since it will make Applied Spectroscopy more attractive to potential authors.

Table 4: Impact Factor calculated with Focal Points excluded from the calculation

Appl. Spec.	Pubs	Cites to papers published in the 2 years before	Impact Factor	FP Reviews in publication year	Cites to FP Reviews published in the 2 years before	Fraction of cites that are to FP's	IP without FP's
2004	219			4			
2005	201			6			
2006	208	789	1.879	5	27	3.4	1.859
2007	197	778	1.902	3	30	3.9	1.879
2008	207	835	2.062	6	32	3.8	2.023
2009	195	632	1.564	3	14	2.2	1.565
2010	197	695	1.729	2	28	4.0	1.697
2011	177	652	1.663	9	23	3.5	1.625
2012 <--	177	732	1.942	10	97	13.3	1.749
2013	188	719	2.014	8	233	32.4	1.451
*2014**	*170*	*367*		*5*	*111*	30.2	

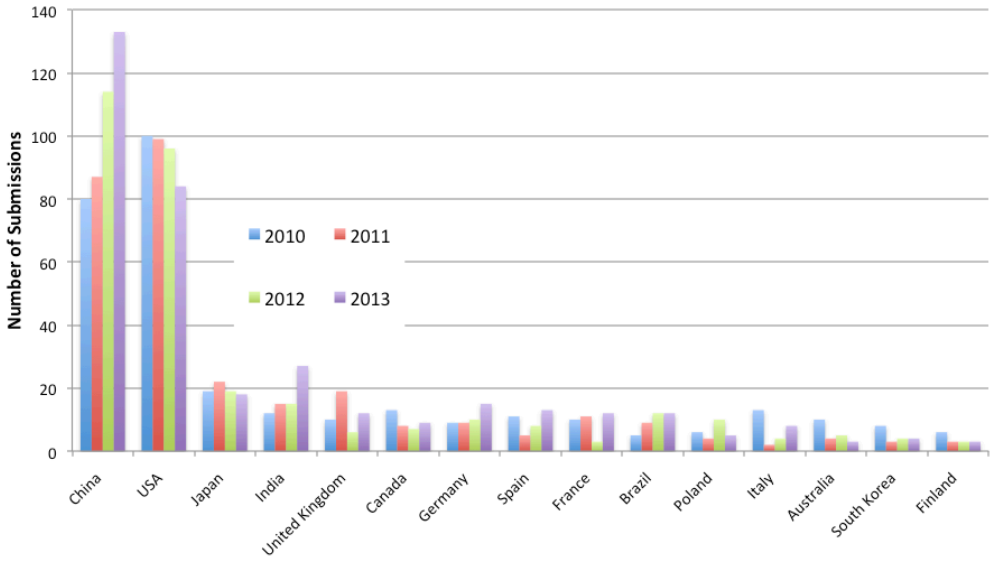
* Data is incomplete (August 14, 2014)

<-- Focal Points were made open access starting 2012

Submissions by country of origin

Figure 6 (below) shows the breakdown of submissions 2010 to 2013 by country of origin for the top 15 countries. The number of submissions from China has increased steadily over the past four years, a trend that is expected to continue in the future. My concern with this is that journal selection for authors from China, like those in many other countries, is being primarily guided by impact factor. There is anecdotal evidence that researchers are rewarded by publishing in higher impact factor journals. I believe that we are not receiving the more cutting edge manuscripts because of this. Rather we are receiving many lower quality manuscripts that lack novelty which authors are trying to publish in journals that are better then their work has been published in the past. This is not universally the case but it is certainly the trend. Until we get the impact factor up or the psychology changes this is going to continue to be the norm.

Figure 6: Submissions 2010 to 2013 by country of origin



Review times:

Stats on the review time are provided in the table below. The rate limiting steps are the *securing reviewers* and *waiting for both reviews to be returned.* Our goal continues be to reduce the *"Average Days from Received to Decision Rendered"* to under 40 days. We are doing this by being more dogged in securing overdue reviews and to assigning extra reviewers upon initial submission. The two biggest challenges we face are dealing with tardy reviewers and reviewers who do not respond to requests to review.

Table 5: Review time data

Applied Spectroscopy	2011	2012	2013	2014*
Review Time Statistics				
Average Days from Date Received to Associate Editor Secured	2.7	3.8	4.5	3.4
Average Days from Date Received to First Reviewer Secured	9.7	12.9	13.8	12.59
Average Days from Date Received to Final Reviewer Secured	24.0	25.8	25.6	23.8
Average Days from Date Received to First Decision (review returned)	39.3	38.9	39.0	32.87
Average Days from First Reviewer Secured to Final Review Returned	42.7	42.7	35.4	26.34
Average Days from Final Review Returned to Final Decision	2.8	3.2	4.0	3.75
Average Days from Received to Decision Rendered	55.2	58.8	53.2	42.7

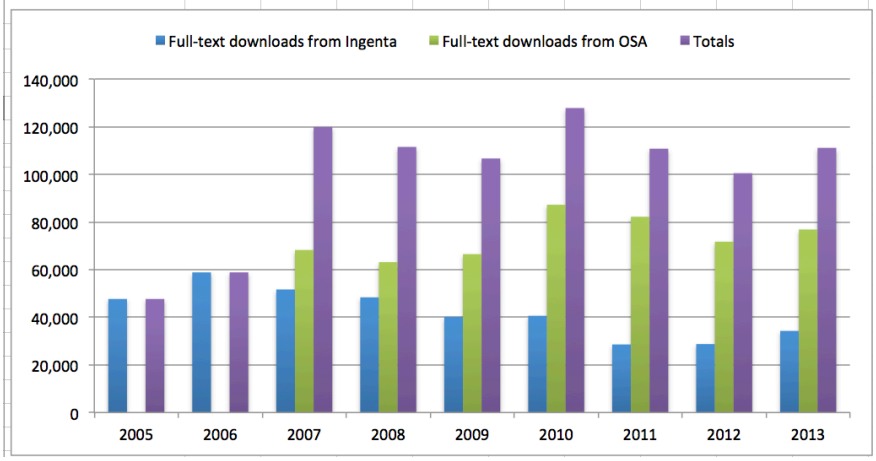
* Data up to August 20, 2014

Downloads Statistics

The table and graphic below indicate that our downloads were up for 2013 relative to 2012 for both Ingenta and OSA. Downloads to the end of July for 2014 OSA and Ingenta are 53,781 which means we are on track for about 100,000 for 2014.

Figure 7: Number of full text downloads by year.

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Full-text downloads from Ingenta	47,672	58,843	51,673	48,370	40,167	40,608	28,583	28,755	34,267
Full-text downloads from OSA	0	0	68,248	63,148	66,502	87,236	82,197	71,734	76,857
Totals	47,672	58,843	119,921	111,518	106,669	127,844	110,780	100,489	111,124



Top downloaded articles to date for 2014 (Source: Ingenta and OSA)

		Volume	Issue	SAS	OSA	TOTAL
1	Quantum Dots in Bioanalysis: A Review of Applications Across Various Platforms for Fluorescence Spectroscopy and Imaging	67	3	288	686	974
2	AFM-IR: Combining Atomic Force Microscopy and Infrared Spectroscopy for Nanoscale Chemical Characterization	66	12	82	662	744
3	Surface-Enhanced Raman Scattering (SERS) and Surface-Enhanced Resonance Raman Scattering (SERRS): A Review of Applications	65	8	263	456	719
4	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) for Quantitative Analysis in Environmental and Life Sciences: A Review of Challenges, Solutions, and Trends	66	8	18	673	691
5	Laser-Induced Breakdown Spectroscopy (LIBS), Part II: Review of Instrumental and Methodological Approaches to Material Analysis and Applications to Different Fields	66	4	152	497	649
6	Review of Super-Resolution Fluorescence Microscopy for Biology	65	9	230	346	576
7	Application of Spectroscopic Ellipsometry and Mueller Ellipsometry to Optical Characterization	67	1	96	138	234
8	Time-Resolved Resonance Raman Spectroscopy: Exploring Reactive Intermediates	65	10	?	146	146
9	Spectroscopy of Scattered Light for the Characterization of Micro and Nanoscale Objects in Biology and Medicine	68	2	20	146	166
10	Subsurface Raman Analysis of Thin Painted Layers (Oen Access)	68	6	144	?	144

Yellow – Focal Point Review (Open Access)