Science AMA Series: We're Prof. Gerald Frankel and Roque Calvo, here to talk about Open Access and The Electrochemical Society's Free the Science initiative. AMA!

Electrochemical$_{S}oc^{1}and r/ScienceAMAs^{1}$

[1]Affiliation not available

April 17, 2023

the WINNOWER

REDDIT

Science AMA Series: We're Prof. Gerald Frankel and Roque Calvo, here to talk about Open Access and The Electrochemical Society's Free the Science initiative. AMA!

ELECTROCHEMICAL_SOC R/SCIENCE

[removed]

CORRESPONDENCE:

DATE RECEIVED:
October 21, 2016

DOI:
10.15200/winn.147696.64251

ARCHIVED:
October 20, 2016

CITATION:
Electrochemical_Soc , r/Science , Science AMA Series: We're Prof. Gerald Frankel and Roque Calvo, here to talk about Open Access and The Electrochemical Society's Free the Science initiative. AMA!, *The Winnower* 3:e147696.64251 , 2016 , DOI: 10.15200/winn.147696.64251

Hi there!

your approach seems pretty interesting. Open access without those ridiculous author charges could finally be a game changer.

That's why I'd like to ask you about the current status of academic publishing. Most open access journals, including those published by no-profit scientific societies (IEEE, IOP and many Others) need to charge unreasonable fees to the authors to break even (1000-3000 $/paper). I've read that even plos is barely breaking even. I think that if a no-profit like IOP charges so much, they must have a reason.

So my question are:

- what are the costs that add up to such an incredible fee?
- Keeping in mind your answer to the first question, how do you plan to achieve this much, much lower costs?

Thank you!

lucaxx85

This is Jerry. The article processing fee (APC) for publishing open access in ECS journals (which is now optional) is only $800. And that will go to $0 when we go online with full open access. Part of the "incredible fee" for OA at the journals published by most publishers is the profit that they add on to their costs.

Hi there!

your approach seems pretty interesting. Open access without those ridiculous author charges could finally be a game changer.

That's why I'd like to ask you about the current status of academic publishing. Most open access journals, including those published by no-profit scientific societies (IEEE, IOP and many Others) need to charge unreasonable fees to the authors to break even (1000-3000 $/paper). I've read that even plos is barely breaking even. I think that if a no-profit like IOP charges so much, they must have a reason.

So my question are:

- what are the costs that add up to such an incredible fee?
- Keeping in mind your answer to the first question, how do you plan to achieve this much, much

lower costs?
Thank you!

lucaxx85

This is Roque: ECS plays a stewardship role in the advancement of our science so publishing research involves much more than just posting information like one could do on a social media website. The costs include: 1. a vigorous editorial review process to insure the quality and accuracy of our published manuscripts, 2. appropriate linkage in the composition of accepted manuscripts to create maximum discoverability, and 3. a sophisticated library platform to enable broad access or dissemination. Technology has improved our efficiency and will continue to do so, but we recognize that we'll have to manage some significant publications costs for the foreseeable future so we've embarked on a campaign to both build a fund and develop partnerships to support our publications and advance this critically important science. The government mandates and ridiculous price barriers for research instituted by big publishers have created a huge wave of support for open science and resultantly numerous foundations have committed to fund open access publishing initiatives like ours. We have already established a partnership with the Center for Open Science (COS) who has secured significant foundation support. COS will provide some of our publications services and platform at no cost as long as our publications are freely available to the public and that is where we are going with our Free the Science http://freethescience.org/ initiative.

Forgive my ignorance, but why haven't scientists created a free or cheaper platform for publishing their work? The ridiculous cost of it seems like it's just a method of price gouging. I do understand there's exposure, a certain level of professionalism needed, and critiquing that work, that it needs to go under, but it seems unnecessary in today's world.

jeepbrahh

This is Roque: You are exactly correct about the ridiculous costs to access publications. Research publishing has become commercialized and the big publishers have increased the size and scope of the number of journals in their stables. Through bundling and exorbitant pricing they have essentially abused the subscription model to generate consistent profit margins from 35% - 40%. Sure there is a cost for the platform but the "ridiculous cost" that you reference is unnecessary and simply based on a profit motive. Clearly, this is an obstacle to dissemination of research and ultimately innovation. Most scientists have worked in the "publish or perish" environment where job security, advancement, tenure, etc. is dependent on publishing in the top journals (sometimes referred to as "glam" journals) most of which are in the big publisher bundles. So authors publish with them and libraries purchase these subscriptions at these ridiculous prices mainly because this is a system that has been in place and necessary for research dissemination…until now. We constantly hear that wealthy universities like MIT and Harvard have to make difficult decisions due to exorbitant subscription fees. There are better alternatives and more effective ways for scientific advancement and we are one of many organizations driving a movement to Free the Science: http://freethescience.org/

Hi, thanks so much for doing this AMA!

What do you think of the way new scientific knowledge is disseminated to the general public? Usually, a somewhat misleading 'click bait' title is slapped on a rough summary article that often doesn't fully represent the new data. Do you think this is unavoidable given the current culture, or is it a bad practice that needs to be called out and ideally ended?

I see fewer children and young adults interested in the sciences now than ever before. Do you have an opinion on what we can do as a society to foster curiosity and intelligent pursuits in the next generation?

Thanks again!

theevolvingatheist

This is Roque: Scientific information is simply not disseminated to the general public. No one outside of the scholarly research community is paying thousands of dollars to access journals which aren't relevant to their field. Free the Science has the ability to change that, by making data widely available

to the public for the pursuit of knowledge.

And you're right, those misleading 'click bait' titles don't fully represent the data. So you read an abstract and then pay for the information and halfway through you find that it isn't relevant to your project any longer. That's wasted money. This is a BAD practice, even an unethical one, and the best way to stop it is through open access. This is not unavoidable and we plan to tackle it head on.

In terms of fostering people's interest in science, ECS is obviously focused on education and being part of the STEM conversation. We also try to tell the personal side of science through a series of videos we have with some of the most notable people in our field. Check out: http://www.electrochem.org/digital-media

Hi, thanks so much for doing this AMA!

What do you think of the way new scientific knowledge is disseminated to the general public? Usually, a somewhat misleading 'click bait' title is slapped on a rough summary article that often doesn't fully represent the new data. Do you think this is unavoidable given the current culture, or is it a bad practice that needs to be called out and ideally ended?

I see fewer children and young adults interested in the sciences now than ever before. Do you have an opinion on what we can do as a society to foster curiosity and intelligent pursuits in the next generation?

Thanks again!

theevolvingatheist

This is Jerry. I am the Technical Editor for JES in the area of corrosion. I don't believe that "click bait" is an accurate representation of the papers that we publish. I look closely at the title. If the papers don't reflect what is in the title, it will not be published. The only way to punish this practice in other journals is with your feet – don't submit to journals that do this.

What do you think about guerilla open access, like sci hub?

buckykat

This is Roque. Thanks for your question. AAAS's Science did an article on this here: http://science.sciencemag.org/content/352/6285/497 I wrote this response letter which I think addresses your question: RE: What's the REAL Problem in Publishing? (29 April 2016) As a nonprofit scientific research publisher, my organization, The Electrochemical Society, has experienced for decades cancellation in institutional subscriptions which impacts our mission based goal "to disseminate research to advance the science." These cancellations are a direct result of excessive journal pricing and bundling tactics of the large commercial publishers that have strained library budgets. As a former President of the Council of Engineering and Scientific Society Executives, I've observed this problem impacting many scientific societies. With few exceptions, most independent society publishers have migrated to platforms and services provided by the commercial enterprises in order to sustain the financial resources necessary for programs and support for their communities. I think this is tragic. It has led to monopolistic control by a few large commercial publishers who determine the price and distribution of research—research that other people have generated for them! High subscription rates generate profit margins that regularly exceed 30% and guarantee that many publications are not available to scientists around the world. Essentially billions of dollars are going toward research publishers rather than researchers and their labs. All of this significantly stifles the AAAS mission and ours: to advance science. I don't condone the illegal actions of Sci-Hub and recognize the potential for more subscription cancelations but the subscription based system for distributing research is broken and inhibiting the advancement of important scientific innovations. I don't love Sci-Hub, but it may help lead to a legitimate system correction and movement towards Open Access. Greater advancement requires greater openness which we have committed to through our initiative to Free the Science, which will make all research in our digital library free to publish and free to read. By doing this we hope to accelerate scientific discovery in electrochemical and solid state science which are key sciences for the sustainability of our planet. This is both a mission-based initiative as well as a response to our global need to find solutions.

It seems like your goal is to promote science in culture. It at least seems like one of your goals. My question is based on the premise that the incoming generation and laypeople don't have access or 'know how' in order to understand the wonderful things scientists are doing with their careers: many people don't have a basic understanding of scientific principles. What do you plan to do in order to overcome this hurdle? Do you plan to make information more freely available to the public (e.g. affordable books with detailed explanations of principles in chemistry, physics, biology, etc)? Perhaps you plan to do more open source education? I'm just curious whether there is a plan with phases that could help you to promote and market science.

Reddirator

This is Roque: You are so right, most people don't understand the science behind the devices they use, that govern their diets and health models, and that could solve serious environmental problems. One of the ways we plan to address this is through Free the Science. By making this research available to everyone, it means that people who want a better understanding of something can simply go read about it for free. No one who wants to learn more about solar energy, when it's not directly related to their field, would pay thousands of dollars to access it. But if it's free then why not? We plan on heavily marketing our open access initiative to the public so that the research can benefit the global community, not just the scientific community. We need partners everywhere—in education, policy, development, etc.—to help spread the word.

It seems like your goal is to promote science in culture. It at least seems like one of your goals. My question is based on the premise that the incoming generation and laypeople don't have access or 'know how' in order to understand the wonderful things scientists are doing with their careers: many people don't have a basic understanding of scientific principles. What do you plan to do in order to overcome this hurdle? Do you plan to make information more freely available to the public (e.g. affordable books with detailed explanations of principles in chemistry, physics, biology, etc)? Perhaps you plan to do more open source education? I'm just curious whether there is a plan with phases that could help you to promote and market science.

Reddirator

This is Jerry. ECS is a scientific professional society, and its journals publish paper of the highest scientific quality. So the main goal of OA is to disseminate this groundbreaking science to the world. You are right that many people do not have the background to consume this content and need information at another level. ECS provides various types of content at its website for the public: http://knowledge.electrochem.org/ and http://www.electrochem.org/digital-media

As a community college student who struggles frequently to access papers I need for my humble little research project I want to take a moment in this thread to remind my fellow students that many researchers are more than happy to send you copies of their publication if you can find a way to contact them. It's slow and you always feel like a heel for taking their time, but it is usually effective. On the bright side, you have the advantage of being able to personally thank the author for his work if you contact them personally and I have to believe that is nice to hear on thei end.

I also want to thank everyone involved in projects that help people like me access scholarly papers. It's hard enough finding yourself unable to afford large schools when you want to go into science, hopefully some of us poor kids will be able to make better contributions to science in the future thanks to your efforts. You da real mvp!

What are the largest obstacles to making this information free? In a world with things like craigslist and wikipedia operating for free I can't help but feel that we should be able to find a way to cover funding gaps. What exactly are the things standing in the way?

TheMightyQuin432

This is Roque: Thank you for expressing how this might affect you. While many people think that open access can only benefit developing countries, we certainly see a need here in the US, especially given the current trend of increased enrollment at community colleges. There are 7.3 million students

currently enrolled in community colleges across the US, a number expected to go up because of the cost of 4-year institutions. Community colleges don't always have the funds to purchase research, and while e-mailing authors can grant you access to their research it is frustrating when you can only read the preview or abstract and then find that the research doesn't exactly fit your work when factoring in response time. Free the Science will benefit everyone who wants to read research and the world will benefit from having more minds and perspectives working on solving problems.

As for the largest obstacle in making science free: it's funding. It costs a lot of money to publish journals online. It's not like posting a blog—there are a lot of steps and costs involved. The reason Wikipedia and Craigslist can do everything for free is they have huge investors. That's what we need too and we're well on our way to raising the fund we need. And, the good news is that there are many funding organizations interested in open access, democratization of information, etc. the moment.

As a community college student who struggles frequently to access papers I need for my humble little research project I want to take a moment in this thread to remind my fellow students that many researchers are more than happy to send you copies of their publication if you can find a way to contact them. It's slow and you always feel like a heel for taking their time, but it is usually effective. On the bright side, you have the advantage of being able to personally thank the author for his work if you contact them personally and I have to believe that is nice to hear on thei end.

I also want to thank everyone involved in projects that help people like me access scholarly papers. It's hard enough finding yourself unable to afford large schools when you want to go into science, hopefully some of us poor kids will be able to make better contributions to science in the future thanks to your efforts. You da real mvp!

What are the largest obstacles to making this information free? In a world with things like craigslist and wikipedia operating for free I can't help but feel that we should be able to find a way to cover funding gaps. What exactly are the things standing in the way?

TheMightyQuin432

This is Jerry. It is really great that you are involved in research at a community college! Congratulations for that! It is exactly for people like you that we need to have open access to scientific information.

Hey guys! Thank you for taking the time to do this AMA!

In a brief explanation what do you believe is the biggest barrier to the use of open access around the globe? As a student I've been introduced to some pro's and con's of open source. I am just curious what the major holdup is in terms of implementation from a professional standpoint.

Thanks again!

J23Shields

This is Jerry. Thanks for the question. Students like you should be thinking about these issues. I believe that the biggest barrier to OA is the fact that scientific publishing is controlled by for-profit corporations whose main goal, as mandated by their stockholders, is to make as much money as possible. The dissemination of information is the means by which they do that, but it is not the factor that is maximized. These publishers have journals with high impact factors in which authors want to publish their work. As a result, the journals can charge extraordinarily high APCs for OA papers. Interestingly, the authors who pay these APCs are often working at institutions that are also paying huge subscription fees for these publications. So there is no motivation to lower the APCs. Their business model is working great as it is – taking the work and intellectual property of others and charging for its dissemination. This practice is exactly counter to the ethos of the internet, which brings information to the world for free – the internet is mostly open access!

1. Do you believe that scientists in your and other fields would publish on peer-reviewed platforms that allow true open access to the scientific community and laymen? Or is having a as good as possible H-Index by publishing in the paid journals a higher priority?
2. How can a trend towards open access be fostered?

Thank you for your AMA!

MaikNFurther

This is Roque: I believe that, yes, scientists in our field and especially in other fields where the concept of open information is much more popular (such as the social sciences), would publish on such a platform. At the moment OA is popular but not as large as the movement could be because further education is needed. Right now, many OA journals charge APCSs, or article processing charges, and they can range (in our field) anywhere from $2,000 to $6,000 to publish. With Free the Science we want to completely eradicate APCs so it's free to publish -- we hope to attract more authors because they can save the money on publishing and instead use it for their research.

You can help foster a trend toward open access, not only through publishing open access regularly, but also by taking heed of the egregious profit margins that publishing companies make. Elsevier makes 40% profit margins by typesetting and printing research that they did no work on. Those margins surpass almost every industry, including the car, banking, big box stores, and tech industries.

Dr. Frankel,

I'm a freshman studying Materials Science & Engineering at UC Berkeley and the more I learn about the field the more excited I am to one day be a part of it! As you are of course very experienced in MSE, I have a few questions about what I might expect if I choose to pursue a career in it.

1. Looking back, what did you do during your undergrad that set the foundation for such a successful career? Did you seek out internships? Were you the top of your class? Did you do research in chemistry and materials science outside the scope of your classes? Similarly, if you could change something about your undergrad years, what would it be?

2. I also have an interest in the degradation of materials! What is the most interesting project you've been a part of?

3. My father is a manufacturers' rep for companies that sell things like weathering steels, PVDF resin finishes, anodized aluminum, and other materials meant to stave off atmospheric corrosion/degradation. In your opinion, what is the "next big thing" in the commercial construction industry in the area of material degradation? Or, what are some recent research advancements that have not yet made it to industry but are promising in their properties?

Thank you so much for taking the time to do this AMA!

Edit: I just now looked at the title and saw you are here to talk about open access and the free science initiative, so I apologize for my questions being off-topic and I understand if they aren't prioritized. What you all are doing with respect to the free science initiative looks amazing for the future of science and society! Widespread access to information is a major step toward having a scientifically informed public, which I think is an amazing goal to have. Keep up the great work!

JustinianTheWrong

This is Jerry. Lots of good questions and thanks for understanding that I'm going to prioritize other questions. I'll get back later, but MSE is a great major! And you can take a class in corrosion at Berkeley from Prof. Devine.

Dr. Frankel,

I'm a freshman studying Materials Science & Engineering at UC Berkeley and the more I learn about the field the more excited I am to one day be a part of it! As you are of course very experienced in MSE, I have a few questions about what I might expect if I choose to pursue a career in it.

1. Looking back, what did you do during your undergrad that set the foundation for such a successful career? Did you seek out internships? Were you the top of your class? Did you do research in chemistry and materials science outside the scope of your classes? Similarly, if you could change something about your undergrad years, what would it be?

2. I also have an interest in the degradation of materials! What is the most interesting project you've been a part of?

3. My father is a manufacturers' rep for companies that sell things like weathering steels, PVDF resin finishes, anodized aluminum, and other materials meant to stave off atmospheric corrosion/degradation. In your opinion, what is the "next big thing" in the commercial construction industry in the area of material degradation? Or, what are some recent research advancements that have not yet made it to industry but are promising in their properties?

Thank you so much for taking the time to do this AMA!

Edit: I just now looked at the title and saw you are here to talk about open access and the free science initiative, so I apologize for my questions being off-topic and I understand if they aren't prioritized. What you all are doing with respect to the free science initiative looks amazing for the future of science and society! Widespread access to information is a major step toward having a scientifically informed public, which I think is an amazing goal to have. Keep up the great work!

JustinianTheWrong

This is Roque. Check out some of our videos that tell the life story of some of our community members. Hopefully that inspires you. http://www.electrochem.org/digital-media

What do you think the governments role should be in this movement? A lot of people believe that research done with taxpayer money should be freely available to the public. Do you have plans for lobbying for legal changes like this?

IMYMI

This is Roque: We believe the government SHOULD have a role in this movement, and that taxpayer funded research belongs to the public. We do not believe the government should create funds for publishing because then the government is essentially subsidizing these for-profit publishers. We do not lobby for legal changes due to our tax-status with the IRS (we are a non-profit 501C3).

I have heard about free the science at some meetings and understand the impacts it could have on sustainability, which is great. but what will the benefits be to the people in industry? or in academics?

dch68779

This is Roque. Open access benefits many sectors. For industry, our open library will serve as a virtual R&D lab which is important as gone are the days of extensive research departments like those at Bell Labs. Free the Science provides the same information to and equalizes the playing field for large and small companies, just like it would for universities of all sizes.

Hi! Thank you for doing this AMA and for your initiative. It is highly appreciated from countries like Venezuela where most universities can't afford subscription fees.

What are the problems you expect to face when turning those prestigious journals to an open access system?

Have you had any pressure from big editorials like Elsevier to keep the paywall in your periodicals?

WkendLabRat

This is Roque: Education is a really big obstacle. There is a revolutionary change happening in scholarly publishing that is being driven by Open Access. Unfortunately, it is believed that OA journals are of a lower quality and aren't necessarily as attractive to authors. That is in part because many OA journals are spin-off journals. ECS is converting our peer-reviewed flagship journals to OA to show our confidence and commitment to this new publishing model.

ECS is one of the few remaining non-profit science publishers that is still publishing in-house. We are not partnered with any of the big publishers such as Elsevier or Wiley, so we have complete

independence.

Why is it so difficult to make batteries for electric cars that last 300 miles or so before recharging? What a great thing that would be for the planet and getting away from foreign oil?

Also, we hear so many times over a century that all kinds of cheap ways to travel/produce energy are invented and oil companies (and globalist?) buy them and hide them. Is there any truth to any of this?

JamesNatBrnCit

This is Jerry. My specialty is corrosion and not batteries, but corrosion is just a shorted battery so I know enough about batteries to be dangerous!

Batteries can be considered as units of energy. So there is no problem to put lots of batteries in series to create more energy. The problems are the cost of all of those batteries and their weight. As the proud owner of an EV (2015 Nissan Leaf), I can tell you that they give a great driving experience. One downside of a high mile capacity car is the time required to charge it. It will take 3x longer to charge a 300 mi range car than my 100 mi Leaf.

Hello!

I find your initiative admirable.

I'm a grad student studying electrocoagulation. Have you ever studied this process? Does the journal receive papers regarding this subject? If so, what is your take in the technical feasibility and general state of art of the process, and the attention devoted to it by academia? I find it a very promising treatment technolog for wastewater, but as far as my knowledge goes, there is still a lack of scientific knowledge, specially regarding project of reactors. Thank you very much and sorry if it isn't your areanof expertise!

Atena22

This is Roque. Thank you for you comments. A quick search in our digital library on electrocoagulation gave us these results: http://ecsdl.org/search?fulltext=electrocoagulation&journalcode=ecsmtgabs%7Cecst%7Ceel%7Cesl%7Cjes%7Cjss%7Cssl&submit=yes&x=0&y=0 Hopefully you can read more next week (Open Access Week) when the library is free to read and download!

Hello!

I find your initiative admirable.

I'm a grad student studying electrocoagulation. Have you ever studied this process? Does the journal receive papers regarding this subject? If so, what is your take in the technical feasibility and general state of art of the process, and the attention devoted to it by academia? I find it a very promising treatment technolog for wastewater, but as far as my knowledge goes, there is still a lack of scientific knowledge, specially regarding project of reactors. Thank you very much and sorry if it isn't your areanof expertise!

Atena22

This is Jerry. Not my area! But a search shows me that there are only 4 papers on electrocoagulation in JES. Other journals are much more active in this area.

What is your opinion of Sci hub? Ends justify the means or do the means disqualify the ends?

ThePrepEnt

See our response to buckykat

Hi, thanks for doing this AMA!

Modern science has grown exceptionally broad, and areas of research that used to be specific disciplines now encompass numerous niche fields. These specific research topics frequently do not overlap in terms of their underlying science other than by the overarching name of their discipline. As this process continues, the likelihood that a reviewer who is an expert in a given field will review a manuscript that is technically in their field but out of their realm of expertise or understanding increases. How do you suggest combating this challenge from the perspective of a scientist who has had their paper reviewed by someone they feel has misunderstood their research?

splitdontemit

This is Jerry. As stated in my response to whatevs, the technical editor has lots of power, part of which is in the choice of reviewers. If you feel that the reviewers of your paper did not understand the paper, you can try to communicate that to the editor, who should respectfully respond to your inquiry. If you don't get a respectful response, then submit elsewhere the next time. I would be in favor of a system that allowed submitting authors to evaluate the editor and the review process. There is currently no way to influence the behavior of editors who mistreat authors.

Publishing Related: What are your thoughts on the "publish or perish" type atmosphere that academia is often described as?

Open Access related: Is it possible to move away from the publishing model? As the newspaper has/is dieing, do you think scientific journals may experience something similar?

I know many journals publish online, but I'm more interested in change in the format. Could a collective peer reviewed website exist where all results, even "bad" ones, be shared without concern for "publish or perish"?

esuma10

This is Jerry. The job of professor at a research university involves teaching, scholarship, and service. A professor will prosper if they are successful in these areas. Advancing knowledge in your chosen field and being involved in solving the important problems of the day are critical, and it also benefits the students you teach and those you advise in their research. Part of the process of scholarship is communicating your work with others (if a tree falls in the woods…). I have never felt burdened by publish or perish because publication is a natural and important part of what I do. I don't see publication of results going away, but it will certainly change – that is what we are trying to do. And there is value in publishing in journals with high standards - ECS will always maintain high standards. There is certainly a place for the kind of journal you mention, but the best work will not end up there.

Could you outline the initial steps of this process for the lay person to understand? What is so significant about access to this information, and do you see this further access as having a positive effect on future research? Thank you for your time!

chrislink73

This is Roque: Important research, like in our case, that has to do with the sustainability of the planet, has to be free to the public. It has a positive effect on future research because when other related experiments are available for free it reduces the amount of null results. People can use this to build on others' work. This creates innovation and solves critical problems. Knowledge = Power

Dr. Frankel,

I am a fan of open access and congratulations on this initiative. To be completely honest, this sounds a bit too good to be true. What is the catch? Will this seemingly devalue the hard work of scientists and engineers? Can we expect ECS to start making it easier to "free the science" via conferences as well (lowering fees or even streaming sessions)?

MSEgirl

There is no catch, other than the challenge of ECS to develop the funds to support the initiative. We will maintain the current high standards for publication. Just because it is OA does not make a journal low quality even though there are a lot of low quality OA journals who make money through APCs and will publish anything. Meetings are another really important part of what ECS and other societies do. Face to face interactions and networking cannot be replaced by distance technology at this stage. Unfortunately, it is very expensive to put on a conference. The registration fees at ECS meetings are comparatively reasonable. But I like the idea of streaming sessions! Good idea.

I've always thought it fantastically strange that through all my years of public education, I was NEVER shown an actual article in a scientific journal. I was never taught the skills I would need to read them and understand them, I was never taught to access them using databases, and so on. And I am NOT alone in this.

Do you think that having free access to so many scientific articles and papers means that there could be some meaningful reform in high school curriculum to solve this issue? Have you spoken with anyone in the education industry/department?

Prometheus720

This is Jerry. ECS publishes scientific papers of the highest quality written by experts with the intended audience of other experts. I don't think that they are suitable for inclusion in a high school curriculum. On the other hand, there are many exceptional high school students who are involved in interesting research projects. These students will benefit enormously from free access to the scientific literature.

Thanks for doing this AMA!

Is there a metric that you have identified when an open-access journal passes a "critical mass" threshold and starts to gain traction and grow organically?

I'll leave this question intentionally open-ended. I can appreciate that there are many factors such as submissions/week, your review and publish throughput, cross-citations and subject matter breadth that would play a role. Would love to hear what you consider the important factors to be.

antshatepants

This is Jerry. Other publishers have started new journals that are open access. We are taking a different approach. The Journal of the Electrochemical Society has been published for 114 years. There is no threshold to cross, and no need for marketing, which is required for a new journal.

peer reviewing has been riddled with problems, with obvious consequences for quality and reputation of scientific works as a whole.

one of the problems identified the lack of transparency in the review process.

1. what are your thoughts on double blind review?
2. what are your thoughts on publishing the review, together with the answer, after a paper is accepted?

edit: formatting.

whatevs

This is Jerry. As the Technical Editor for JES on the topic of corrosion, I handle the review of lots of manuscripts. I also publish a lot through my own work (actually, the work of my students) so much of my daily activity involves the publication process. I believe that the review process at JES works very well, better than at other journals. We provide useful and timely comments to authors. We can quickly weed out the papers that obviously don't clear the bar, learn from reviewers if the paper is worthy, and provide feedback on most papers that ends up improving them greatly. I don't see much in the way of

biased reviews and, when I do, can handle it with comments to the authors. I don't see the value of double blind review – the references usually give away who the authors are anyway. In general, I'm not in favor of publishing the reviews. I require that the authors in their rebuttal show how the issue was addressed in the revision or provide a clear rationale for why they did opted not to address the comment in the revision. In this way, the important comments get handled and the comments that are off the mark are appropriately disregarded. I think that publication of this exchange would take away from the impact of the paper, though in some cases it would indeed make good reading. There is no doubt that the technical editor carries a lot of power in the process and certain editors abuse that power in ways that are unfortunate. In those situations, publication of the comments and responses would be helpful for revealing these abuses and maybe forcing these malevolent editors to change their practices. (I obviously don't think that is the case for corrosion papers submitted to JES!)

I don't know if you have thought about this or not, but how do you think an open access model would translate to non-scientific subjects (e.g. the humanities)?

Empigee

This is Roque: there are several efforts in non-scientific subjects too and it's great that there is such a groundswell for sharing information and increasing knowledge.

What are some of the things built in the last one hundred years or so that are soon to start causing major problems in our infrastructure due to corrosion? What have we built that was "stupid" to build if we judge it by the knowledge and technology we have today? Thank you!

Pounceypants

This is Jerry. Great question – the fragility of the infrastructure is a major concern in the US and around the world. An example is water distribution systems, and water is a resource that is lacking in many places. 100 years ago water pipes were designed to last 100 years. 50 years ago, to save money, they were designed to last 50 years, and etc. So we face a crisis. Flint MI has shown that even a short lack of focus on maintaining infrastructure can have disastrous consequences. Much of the degradation that these systems face can be countered with the latest technologies, but it is expensive. Reinforcing bars in concrete could be made from stainless steel, or protected with cathodic protection systems. We don't often use a life-cycle cost basis in design and instead only take into account the initial construction costs. This leads to expensive maintenance or total replacement before it would otherwise be needed.

What are you doing to encourage other disciplines to open access? What would you suggest that others to help you?

adam_demamps_wingman

This is Roque: we ask that people spread the word about what we're doing. And especially tell people that our library is open next week for International Open Access Week: http://ecsdl.org/.