International Society on Aptamers

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EDITORIAL

Welcome to the 2022 first issue of INSOAP times for this year, your source to what's happening in the aptamer world, presented by the INSOAP team. I don't think any of us could have predicted that 2021 would turn out how it did. Here in Melbourne, we took out the title for the most locked down city in the world and our research took a major hit. It really hit me when I saw an article a few days ago starting 'As we enter the 3rd year of the pandemic….' Due to the omicron variant, we still had a very shaky and unclear road ahead as we entered 2022. That meant that we were unclear on how the conference in 2022 would run. But we will now run the conference as virtual-in-person hybrid and I hope that you are starting to work on your abstracts for submission, if you haven't done so already. We remember that some of our readers will have been affected more than others and I hope you all spend a moment reflecting on this and reach out to colleagues and collaborators to say hi. I hope you are all remaining as sane, safe, and healthy as you can be after another very long year. Here's hoping we don't have to learn more Greek letters in 2022.

As a final note, have you liked our Facebook page? We are currently providing links to new aptamer research papers on a daily basis. Don't have time to keep up to date on current literature? Get our daily updates in your morning newsfeed at https://www.facebook.com/AptaSoc/. Please don't forget to also follow us on twitter (@Aptamer Society, @Japtamers).

Please look after yourselves and those around you. I'll leave you with my favourite quote,

'May the insanity of others float like clouds beneath your feet'

Associate Professor Sarah Shigdar
President

Inside this issue:

Newsletter Contributors:

Prof Sarah Shigdar
Prof Maureen McKeague
Dr Muhammad Sohail
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http://aptamersociety.org
http://www.linkedin.com/groups/8282517
www.facebook.com/AptaSoc
https://twitter.com/AptamerSociety
https://twitter.com/aptamer_connect.

From the Editor

If you have anything you would like to see in the next issue of the INSOAP newsletter, send it directly to sarah.shigdar@deakin.edu.au.

Aptamers Journal

We announced the official journal of INSOAP at Aptamers 2017. Please email us at aptasoc@gmail.com to express your interest in joining the editorial or reviewer team. Please see http://libpubmedia.co.uk/aptamers/ to submit your article.

Calling all Early Career Researchers!

Professor Maureen McKeague

We are now accepting submissions to Aptamers specifically from Early Career Researchers, including postdoctoral fellows - the new generation of aptamer researchers. I highly encourage all of you to consider submitting some of your work here. All publications are open access with subsidised publication fee until the end of July 2022! We accept a variety of manuscript types: articles, reviews, mini-reviews, and protocols, giving you lots of flexibility. Manuscript preparation and submission guidelines are available on the following links:

http://japtamers.co.uk/manuscript-preparation

http://japtamers.co.uk/submit-a-manuscript

Why do this? As an early career researcher, it can be useful to establish your independent and unique research niche. As an example, I published five separate articles in Aptamers in the past few years as corresponding author. Some of those were during my postdoctoral training and some during the first two years of my independent career at McGill University. Having these publications on my CV, as corresponding author, helped demonstrate that I was a ready to establish my own research group and that my ideas were distinct from my former mentors. More importantly, some of these publications were excellent opportunities to learn how to lead the submission of a manuscript and learn how to support my students in their own writing.

Finally, the INSOAP Aptamer community is very supportive. This is a great place to get constructive feedback on your work. In particular, my 2018 publication comparing riboswitches and aptamers was one of the most intensely peer-reviewed documents I have ever submitted! Naturally, this feedback made the manuscript stronger and I learned so much in the process.

We look forward to reading your submissions.

Nominations for INSOAP committee

We are currently asking for expressions of interest for membership of the management committee of INSOAP. If you would like to be an integral part of our Society as it moves forward, please contact me at sarah.shigdar@deakin.edu.au.

Aptamer Symposium 2022 – Sarah Shigdar

Covid-19 had a major impact on conferences everywhere in 2020 and into 2021. We switched, like so many others, to virtual conferences so that we could still hear about your research. We had hoped to be confidently hosting our 2022 Symposium in person, but first Delta and now Omicron are impacting countries around the world. We are now holding a hybrid conference with some in attendance virtually and some in person and we are excited that there will be live applause! We have already got a great list of speakers and it's shaping up to be a highlight for all aptamer researchers. Please register for the conference as soon as you can and whichever format you can attend the Symposium, I'm sure it will be very enjoyable for all.

Registration is open and you can submit an abstract for a poster up to the end of March. We are going to pick some posters for a flash talk round for each day so it is really important that you indicate if you would like to participate and which day you would like to present on. For the provisional agenda and all the information you require to attend, please see this link:

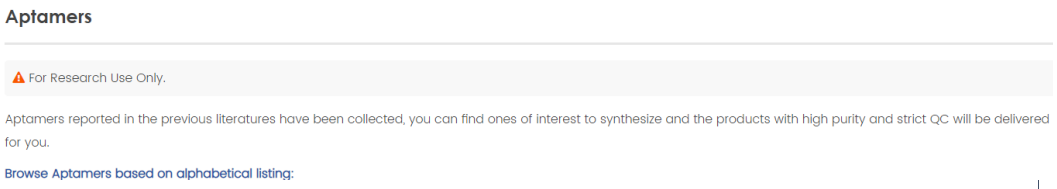
http://libpubmedia.co.uk/aptamers-2022

Are aptamers commercially available? That's not an easy question to answer

Sarah Shigdar

We've all been there, haven't we? Or am I showing my age? Back in the day when we were browsing publications for PCR primers and then ordering them and double and triple checking the sequence has been recorded correctly. Aptamers are very similar, except in this day and age of technological advancements, rather than having to enter them manually, we can just copy and paste them from the source paper into the online ordering system and hey presto, everything works how it should when you test them in an assay. The only time this falls apart is when the sequence is part of a figure and you then have to squint, magnify the image, is that a C or a G and go through the process of double and triple checking them again. I say all this to preface the recent discussions I've been having with colleagues about aptamers. We've got to the point (sorry, this is definitely showing my age) where we can now order most of our reagents online through commercial companies off the shelf rather than again trawling through publications to see who has developed which antibody clone and then asking very politely if you could use some in your experiments. Because of the advances in diagnostics through the 1990s, we have seen an explosion in commercial antibody suppliers. So if you want an antibody, you google it, and then approach one of the companies to commercially purchase it. We are now starting to see some commercial catalogues available for aptamers. What started off as a few companies licensing aptamers from researchers has now become a list of companies that are generating their own validated aptamers for use in diverse research and development applications. Names that I can rattle off the top of my head include Aptamer Sciences in South Korea, The Aptamer Group in the UK, as well as Base Pair Biotechnologies and SomaLogic in the USA. Where we get into a grey area is with other companies offering a catalogue of aptamers. Aptagen has been in the field of aptamers for more than 25 years and as part of their aptamer promotion, they had been maintaining an aptamer database, known as Apta-Index. While not maintained any more, it is still available to view (See newsletter 6:1 for more on aptamer databases). This makes it easy for anyone new to the field of aptamers to order an aptamer without having to copy and paste a sequence in to the order form. The 'hard work' is taken out of it. For each aptamer, they list the length, the binding affinity, and most importantly the reference that you have to cite if/when you publish your work using that aptamer. They also have a great disclaimer at the top of their library

So from this you can clearly see that the catalogue is there purely to assist researchers find an aptamer. It doesn't mean that it is commercially available. This is where we start getting into issues and the unfortunate issue of aptamers still being unconventional reagents. With all the advancements we've had over the last 30 years and more, unconventional reagents have aged out of our conversations. With Aptagen, at least, you should be left in no doubt that these are not licensed by the company and they do not own the rights. Unfortunately, not all companies jumping onto the aptamer band wagon are as good as this. One company that will, at this time, remain nameless, only has the following warning on their website



They also do not link to the original research paper meaning that unaware researchers think these are commercially available aptamers and that they cite the company rather than the researchers that originally generated and characterised the aptamers. Why is this so problematic? Well, for those of us in academia, we are dependent on key metrics for grant applications and promotion. If our work isn't cited, we miss those key metrics that would allow our careers to progress. So back to the conversation that started this. I hope I have provided enough information to them that just because it is listed in a database that is held by a company, it is only if the company has generated and validated the aptamers themselves that they are considered to be commercially available. All others remain the 'property' of the original researcher and should be cited accordingly and appropriately.

INSOAP updated list of recently published aptamers

Maureen McKeague

Here are newly reported aptamers since our last issue. We only report aptamers that have been characterized with a dissociation constant (Table 1). Typically, we make use of Pubmed to identify newly published aptamers with the keywords "aptamer" and "SELEX". If we have missed any newly reported aptamers, please let us know (maureen.mckeague@mcgill.ca). Readers should consult the literature (link provided) for verification and further information.

Table 1: Newly-reported aptamers published since our last issue.

Link	Target(s)
https://pubmed.ncbi.nlm.nih.gov/33522630/	acute promyelocytic leukemia (APL) NB4 cell line
https://pubmed.ncbi.nlm.nih.gov/33524109/	GUAA tetraloop
https://pubmed.ncbi.nlm.nih.gov/33528997/	(-)-trans-Δ9-tetrahydrocannabinol ; synthetic cannabinoids UR-144 and XLR-11
https://pubmed.ncbi.nlm.nih.gov/33536494/	Fibroblast growth factor 5 (FGF5)
https://pubmed.ncbi.nlm.nih.gov/33582948/	*Shigella flexneri*
https://pubmed.ncbi.nlm.nih.gov/33584842/	*Brucella abortus* and *Brucella melitensis*
https://pubmed.ncbi.nlm.nih.gov/33585756/	*Helicobacter pylori*
https://pubmed.ncbi.nlm.nih.gov/33590853/	Interleukin-6 receptor and IL-6
https://pubmed.ncbi.nlm.nih.gov/33592786/	Moxifloxacin, Imatinib and Irinotecan
https://pubmed.ncbi.nlm.nih.gov/33600189/	L-serine
https://pubmed.ncbi.nlm.nih.gov/33619372/	Thioflavin T
https://pubmed.ncbi.nlm.nih.gov/33704314/	PD-L1
https://pubmed.ncbi.nlm.nih.gov/33724284/	PD-L1
https://pubmed.ncbi.nlm.nih.gov/33731432/	piperaquine and mefloquine
https://pubmed.ncbi.nlm.nih.gov/33756378/	erythromycin
https://pubmed.ncbi.nlm.nih.gov/33770580/	human epidermal growth factor receptor 3

https://pubmed.ncbi.nlm.nih.gov/33783197/	NIH3T3/internalization
https://pubmed.ncbi.nlm.nih.gov/33918832/	spheroids of SKBR3 breast cancer
https://pubmed.ncbi.nlm.nih.gov/33960774/	liver cancer SMMC-7721
https://pubmed.ncbi.nlm.nih.gov/33965888/	Tramadol hydrochloride
https://pubmed.ncbi.nlm.nih.gov/33992220/	Roxithromycin
https://pubmed.ncbi.nlm.nih.gov/34019385/	(SARS-CoV-2) lysates
https://pubmed.ncbi.nlm.nih.gov/34028561/	lactate dehydrogenase
https://pubmed.ncbi.nlm.nih.gov/34035661/	receptor for the advanced glycation end-products
https://pubmed.ncbi.nlm.nih.gov/34038704/	intercellular adhesion molecule-1
https://pubmed.ncbi.nlm.nih.gov/34079924/	atrazine and alachlor
https://pubmed.ncbi.nlm.nih.gov/34084332/	adenosine
https://pubmed.ncbi.nlm.nih.gov/34085169/	beclomethasone
https://pubmed.ncbi.nlm.nih.gov/34095949/	myoglobin
https://pubmed.ncbi.nlm.nih.gov/34105524/	esophageal squamous cell carcinoma
https://pubmed.ncbi.nlm.nih.gov/34110440/	Acyclic guanosine analogues
https://pubmed.ncbi.nlm.nih.gov/34112756/	RBD domain of spike protein 1 SARS-CoV-2
https://pubmed.ncbi.nlm.nih.gov/34135365/	Nucleoprotein (NP) of the CCHF virus
https://pubmed.ncbi.nlm.nih.gov/34137155/	lipopolysaccharides
https://pubmed.ncbi.nlm.nih.gov/34144421/	Methyl Spirolide G
https://pubmed.ncbi.nlm.nih.gov/34156053/	ribavirin
https://pubmed.ncbi.nlm.nih.gov/34169309/	dengue NS1 protein variants
https://pubmed.ncbi.nlm.nih.gov/34170922/	wide variety (growth factor, transcription factor, protein kinases etc.)
https://pubmed.ncbi.nlm.nih.gov/34188971/	spike trimer antigen of SARS-CoV-2
https://pubmed.ncbi.nlm.nih.gov/34215119/	Brevetoxins
https://pubmed.ncbi.nlm.nih.gov/34227370/	8-Oxoguanine DNA glycosylase
https://pubmed.ncbi.nlm.nih.gov/34230708/	SARS-CoV-2 Spike
https://pubmed.ncbi.nlm.nih.gov/34231090/	diethyl thiophosphate
https://pubmed.ncbi.nlm.nih.gov/34232998/	S1 subunit of the SARS-CoV-2 spike protein (S1 protein)
https://pubmed.ncbi.nlm.nih.gov/34233000/	structural motifs in nucleic acids
https://pubmed.ncbi.nlm.nih.gov/34233257/	Brassinolide and bisphenol A
https://pubmed.ncbi.nlm.nih.gov/34271397/	*P. falciparum* histidine-rich protein II
https://pubmed.ncbi.nlm.nih.gov/34282416/	receptor binding domain (RBD) of the SARS-CoV-2 S protein
https://pubmed.ncbi.nlm.nih.gov/34309994/	benzopyrylium-coumarin zwitterion.
https://pubmed.ncbi.nlm.nih.gov/34328683/	S N-terminal domain of the SARS-CoV-2 S protein
https://pubmed.ncbi.nlm.nih.gov/34343165/	protein-binding DNA sequences
https://pubmed.ncbi.nlm.nih.gov/34355252/	human sperm cells
https://pubmed.ncbi.nlm.nih.gov/34363139/	Adipose-derived mesenchymal stem cells (ASC)
https://pubmed.ncbi.nlm.nih.gov/34383183/	human osteosarcoma MG-63 cell line
https://pubmed.ncbi.nlm.nih.gov/34384436/	Enterovirus 71 (EV-A71)
https://pubmed.ncbi.nlm.nih.gov/34401413/	Nucleocapsid (N) or Spike (S) antigens of SARS-CoV-2
https://pubmed.ncbi.nlm.nih.gov/34445629/	human transferrin receptor
https://pubmed.ncbi.nlm.nih.gov/34452200/	MUC1
https://pubmed.ncbi.nlm.nih.gov/34466563/	A1 blood group
https://pubmed.ncbi.nlm.nih.gov/34535250/	λ-cyhalothrin
https://pubmed.ncbi.nlm.nih.gov/34546414/	nicotinic acetylcholine receptor
https://pubmed.ncbi.nlm.nih.gov/34549879/	tumor necrosis factor-α
https://pubmed.ncbi.nlm.nih.gov/34580387/	acute myeloid leukemia cells
https://pubmed.ncbi.nlm.nih.gov/34584404/	epithelial cell adhesion molecule
https://pubmed.ncbi.nlm.nih.gov/34638764/	*Akkermansia muciniphila*
https://pubmed.ncbi.nlm.nih.gov/34639187/	Fenitrothion

https://pubmed.ncbi.nlm.nih.gov/34659704/	Kanamycin
https://pubmed.ncbi.nlm.nih.gov/34673993/	cardiac troponin C
https://pubmed.ncbi.nlm.nih.gov/34680368/	transmembrane glycoprotein cluster of differentiation 19 (CD19)
https://pubmed.ncbi.nlm.nih.gov/34696413/	Receptor-Binding Domain of SARS-CoV-2 S Protein Block ACE2
https://pubmed.ncbi.nlm.nih.gov/34711320/	PD-L1
https://pubmed.ncbi.nlm.nih.gov/34714365/	Canine parvovirus-2 (CPV-2) VP2 protein
https://pubmed.ncbi.nlm.nih.gov/34739228/	spike protein of SARS-CoV-2
https://pubmed.ncbi.nlm.nih.gov/34779207/	Hepatocellular carcinoma HepG2/MDR
https://pubmed.ncbi.nlm.nih.gov/34798263/	spike (S) glycoprotein with specific residues on their cellular receptor: the angiotensin converting enzyme 2 (ACE2)
https://pubmed.ncbi.nlm.nih.gov/34809428/	tyramine and β-phenethylamine
https://pubmed.ncbi.nlm.nih.gov/34815029/	C-telopeptide
https://pubmed.ncbi.nlm.nih.gov/34874026/	BRAF V600E-mutated human melanoma cells A375.
https://pubmed.ncbi.nlm.nih.gov/34876524/	receptor binding domain (RBD) of SARS-CoV-2 spike protein
https://pubmed.ncbi.nlm.nih.gov/34906284/	Cadmium Ions
https://pubmed.ncbi.nlm.nih.gov/34918728/	alpha-defensin human neutrophil peptide 1
https://pubmed.ncbi.nlm.nih.gov/34937909/	DFHBI-1T
https://pubmed.ncbi.nlm.nih.gov/34975807/	Largemouth Bass Virus Infected Cells
https://pubmed.ncbi.nlm.nih.gov/35018437/	HIV-1 capsid lattice
https://pubmed.ncbi.nlm.nih.gov/35019367/	PD-1
https://pubmed.ncbi.nlm.nih.gov/35019631/	β-amyloid (Aβ)Aβ42 monomer
https://pubmed.ncbi.nlm.nih.gov/35026634/	rat major urinary protein 13 (MUP13)
https://pubmed.ncbi.nlm.nih.gov/35033276/	ovine pregnancy-associated glycoprotein 7
https://pubmed.ncbi.nlm.nih.gov/35056102/	Mycobacterial Membrane-Derived Extracellular Vesicles in Infected Macrophages
https://pubmed.ncbi.nlm.nih.gov/35084794/	Spike Proteins of Diverse SARS-CoV-2 Variants of Concern
https://pubmed.ncbi.nlm.nih.gov/35114109/	factor V/Va
https://pubmed.ncbi.nlm.nih.gov/35114463/	CDRs of bevacizumab
https://pubmed.ncbi.nlm.nih.gov/35116429/	AXL
https://pubmed.ncbi.nlm.nih.gov/35143165/	caffeine
https://pubmed.ncbi.nlm.nih.gov/35151974/	polysialic acid
https://pubmed.ncbi.nlm.nih.gov/35167174/	human lactoferrin, trypsin, lysozyme, and hemoglobin
https://pubmed.ncbi.nlm.nih.gov/35171466/	Human lipocalin 6 (hLCN6)
https://pubmed.ncbi.nlm.nih.gov/35180537/	ciprofloxacin (CFX) and thioflavin T
https://pubmed.ncbi.nlm.nih.gov/35183559/	hepatitis C virus core protein
https://pubmed.ncbi.nlm.nih.gov/35189346/	*M. hyorhinis*

Jen Heemstra is a mentor with several properties similar to aptamers – high affinity, resilience, and can interact with numerous mentees!

Maureen McKeague and Bruktawit Maru

Led by DNA nanotechnologist expert Hanadi Sleiman, the Canadian training program called PROMOTE provides both cross-functional and multidisciplinary training in nucleic acids as well as job-ready skills to students (see https://nserc-promote.research.mcgill.ca/ for more information). A major objective of PROMOTE is to provide mentorship, build leadership and professional skills that go beyond the academic training. Therefore, thanks to funding from the Natural Sciences and Engineering Research Council of Canada (NSERC), PROMOTE did a 1-hour

networking event with aptamer expert Dr. Jen Heemstra this past November, following a brilliant seminar highlighting her research in aptamer development and aptasensors.

PROMOTE trainees from 5 Canadian universities, with backgrounds ranging from aptamers to oligonucleotide therapeutics, joined in the networking event. Trainees got the opportunity to learn from Dr. Jen Heemstra's academic journey and gain advice on topics such as how to manage work-life balance, deal with imposter syndrome and foster independent thinking. Sandy Zakaria, a 6th year Ph.D. student in the field of functional nucleic acids at McMaster University commented that, "the networking session with Dr. Jen Heemstra was such a great learning experience. Not only did we learn about a profession in academia, but also how to work towards successfully achieving it. Dr. Heemstra's advice about navigating graduate school, the importance of mentorship and discovering careers outside of academia was helpful for preparing graduate students after graduation." Olivia Kovecses, a 2nd year master's student in Pharmacology at McGill University also noted that, "it was a pleasure to meet Dr. Heemstra. I admired her honesty and authenticity during the networking event. In addition to all her amazing accomplishments, Jen did not shy away from sharing any of her past, or current, challenges with us. Rather, she acknowledged different challenging situations she had overcome and provided grounded advice on how we can do the same."
Inspired by her wonderful interaction and advice, we thought the whole aptamer community would like to hear more about her experience in research and how she came into the aptamer world. Therefore, we are excited to feature our interview with Prof. Jen Heemstra in our INSOAP Newsletter.

Interview with a researcher: Prof. Jen Heemstra

Jen Heemstra received her B.S. in Chemistry from the University of California, Irvine, in 2000. At Irvine, she performed undergraduate research with Prof. James Nowick investigating the folding of synthetic beta-sheet mimics, which instilled in her a love of supramolecular chemistry. Jen then moved to the University of Illinois, Urbana-Champaign, where she completed her Ph.D. with Prof. Jeffrey Moore in 2005 studying the reactivity of pyridine-functionalized phenylene ethynylene cavitands. After a brief stint in industry as a medicinal chemist, she moved to Harvard University to pursue postdoctoral research with Prof. David Liu exploring mechanisms for templated nucleic acid synthesis. In 2010, Jen began her independent career in the Department of Chemistry at the University of Utah, and was promoted to Associate Professor with tenure in 2016. In 2017, Jen and her research group moved to the Department of Chemistry at Emory University where she was promoted to Full Professor in 2021. Research in the Heemstra lab is focused on harnessing the molecular recognition and self-assembly properties of nucleic acids for applications in biosensing and bioimaging.

Q1) How did you become interested in the field of aptamers?
Molecular recognition and assembly have fascinated me since I first became a chemist, and in our lab, we think that nucleic acids are really special molecules for exploring molecular recognition and assembly and using these properties for applications that benefit society. Thus, the attraction to aptamers was almost automatic – we are consistently drawn to thinking about what is possible given that we can evolve nucleic acid sequences capable of recognizing targets of interest.

Q2) What are the major challenges that need to be solved?
A key challenge that many before me have pointed out, yet continues to persist, is that a huge fraction of the aptamer sensors reported in the literature still rely on a relatively small handful of aptamers. This is likely because these aptamers can be truncated to short sequences, have highly robust target binding, and/or undergo a dramatic conformation change upon binding. We need

more methods to reliably generate these types of aptamers!

Q3) How did you find out about the INSOAP?
I learned about INSOAP when the Aptamers journal was launched, and I had the pleasure to attend the 2018 meeting in Oxford. I'm thankful to be part of this outstanding community!

Q4) What kind of advice can you give to young researchers?
It may seem like everyone around you knows exactly what they are doing and never fails, but this is not true. We each develop knowledge in certain areas, but also have huge areas where we are not experts and don't feel confident. Also, while we don't talk about it enough, most people in science are dealing with failure or rejection on a very regular basis. You are not alone in the struggle, and the real goal is to be continually learning and growing, not to reach some point of perfection.

Q5) What is your personal philosophy on life and science?
The best part of my job is that I get to spend my days thinking about the question, "How can I make someone else's life better?" That may be through the science we are doing and the technologies we're inventing, but even more often, it is through the people who I have the opportunity to interact with. This can look like celebrating with someone in their success, offering encouragement as they deal with disappointment, or collaborating to create policies that support a healthier academic culture.

Q6) What was your favorite part about research?
I love problem solving. I don't love having problems, but I love the intellectual challenge of dealing with them. Early in my career, the fun part was thinking about an experiment I wanted to try in order to troubleshoot a challenge, and then getting to go into lab and test out my own idea. Now, the fun part is that I get to work with really bright and creative early-career researchers and engage in these problem solving discussions together.

Q7) What do you like to do in your free time?
Most of my hobbies revolve around exercise or the outdoors – I enjoy running, rock climbing, biking, and hiking, and it's even more fun when I get to do these activities with my family. However, I'm also secretly an introvert, so my favorite form of self-care is sitting alone on the couch in my living room, in the dark, after everyone has gone to bed, and just enjoying the silence.

Aptamers Journal

The Aptamers journal is the official journal of the International Society on Aptamers and will publish studies on all aspects of aptamer research. The Aptamers journal, launched at the end of 2017, is the first-ever peer-reviewed journal aimed to publishing all aspects of aptamer research. The journal is specifically open-access to help make aptamer research accessible to scientists all over the world. Moreover, the journal will consider "negative" data, as we all know that this can be very valuable information when performing aptamer research.

The landscape of published articles in the Aptamers journal to-date is very diverse. For example, topics of the presentations include selection methods, aptamer characterization, chemical modification of aptamers, applications in drug delivery and biomaterials. Furthermore, the publications have been received by authors from all over the world: specifically, USA, Germany, Russia, Australia, Canada, South Korea, Switzerland, Uruguay, Japan, Italy, China, Spain, UK, and Jordan. Finally, the journal accepts several forms of publications, and indeed each of the publication formats have included. In particular, we received three full Research Articles, three Research Reports, five Reviews/Mini-Reviews, one Protocol/Method, and three Meeting Reports/News Articles.

We would like to thank our very diverse and international Editorial Council team and reviewers for helping make the publications of these articles a reality. We look forward to many more aptamer articles in 2022! Please submit your articles for peer-review to the Aptamers journal. All symposium delegates can submit an article before 30th September 2022 for free. So if you'd like to publish your work in the first Aptamers journal, please follow this link http://www.JAptamers.co.uk .

Updates to the website

We have been working on updating the website for INSOAP and you will now see that we have a listing of all aptamer companies throughout the world, as well as a listing of all the aptamer laboratories to date. If we haven't got you listed, please get in touch and we will add you to our growing list. We are also providing a careers page so please get in touch with any vacancies you wish to be listed. Finally, if there are any suggestions for improvements to the website, please contact us and we will make the changes.

Aptamer Consortium

Sarah Shigdar

One of issues that we've watched develop over the last few years is the reproducibility crisis that we first discussed in the June 2017 newsletter. At the time we suggested that aptamers could fix some of the issues of reproducibility by providing a more reliable tool for applications. The next step in this process is to develop best practice guidelines for the publication of research articles describing the generation of aptamers and their use in specific applications. To that end, within the Society, we have been discussing the need for a small group of researchers to come together from both Academia and Industry to work on these guidelines. Our Mission Statement, while still a work in progress, states:

'*The Aptamer Consortium supports researchers, academic institutions, and partners, to promote best practice for aptamer techniques in both diagnostics and therapeutics, to provide guidance for basic and applied research as well as development and commercialisation, and facilitate discussion and interchange of ideas*.'

We are currently working on our first paper from the Consortium to be published in the Aptamer Journal in 2022, which will tackle the minimum standards for publishing novel aptamers. If you are interested in sharing your views on the Consortium, please email me (sarah.shigdar@deakin.edu.au).