ISAR News
Newsletter of the International Society for Antiviral Research

Editor Luis M. Schang

IN THIS ISSUE

ISAR PRESIDENT'S MESSAGE

José Esté

It is with great pleasure that I greet all ISAR members and friends in this new issue of the ISAR News.

We are very close to finalizing the Scientific Program for the ICAR in Porto (June 11-15). We have assembled an excellent roster of invited speakers and panelists covering a wide range of issues and making ICAR an excellent opportunity to keep up to date with fundamental, translational and clinical development of new antiviral drugs. Program Chairs Justin Julander and Mark Prichard provide below a short description of planned activities and symposia and an Agenda-at-a-Glance with names of most speakers and titles of their talks is now posted on the ISAR – ICAR website. The 31st ICAR promises to be an outstanding scientific forum. Additionally, the city of Porto will be at its best in June and will be ready to complement your stay with its beautiful scenery, a fantastic ambiance, and marvelous food and dining.

I am extremely thrilled and honored to congratulate Dr. Paul Griffiths as the 2018 recipient of the Gertrude Elion Memorial Award, Dr. Chris Meier for the Antonín Holý Memorial Award, Dr. A. Desiree LaBeaud for the Women in Science Speaker Award and Dr. Ester Ballana for the William Prusoff Young Investigator Award. All awardees represent the true values of ISAR: excellence, love and commitment to science, integrity, and dedication to unravel the complexity of virus infections. Awardees honor the society by accepting to speak at our meeting and, reciprocally, we look forward to honor and celebrate their participation.

In this year's ICAR, we will be hosting a satellite workshop organized by the European Training Network (ETN) on Antiviral and Drug Development. This ETN introduces young investigators to state-of-the-art knowledge and technology applied in antiviral drug development through both local and network-wide training activities. ISAR is excited about their participation as we feel ICAR will contribute to their training and scientific objectives.

This year ISAR is once again open for election of its leadership, including a new President-elect who will become President in 2020, following Johan Neyts term (2018-2020). Candidates Andrea Brancale and Kara Carter are long-standing members of the society, and have participated in multiple roles in the organization of ICAR. Additionally, Joana Rocha-Pereira, Bob Buckheit, Chris Meier, Aruna Sampath, and Pei-Yong Shi are the candidates for the two open seats in the Board of Directors. I congratulate them all for their commitment to work for the society. A short bio of each one of the candidates is included in this issue of the News. I encourage all members to devote a few minutes to login to the ISAR website and vote for the candidates of their choice.

As the time for the 31st ICAR draws nearer, I encourage everyone wishing to participate to register and arrange for travel and accommodation at the earliest convenience. Porto is a highly popular touristic city and the sooner you make your arrangements the better the options you will have to meet your needs and likes. We guarantee all participants an excellent scientific meeting, a fruitful time to spend with colleagues and friends and we hope you take advantage of everything Porto has to offer. We look forward to seeing you in Porto during the 31st ICAR.

I hope you enjoy this new issue of Antiviral News. Your participation is essential. We want to hear your thoughts and opinions on what is important to you. Please feel free to contact us at info@isaricar.com.

José Esté President, ISAR

ISAR, MORE THAN OUR ANNUAL ICAR

Luis M. Schang

Some of us reading this issue of the ISAR News newsletter have been ISAR members for much too long to want to acknowledge it, some are brand new members just learning about the society, and some are not even members yet. But all of us have a tendency to look at our society focusing on our annual conference, ICAR, forgetting, or sometimes not even knowing, how much our society offers and provides to all of us.

ISAR goes far beyond our excellent annual ICAR meetings. It provides us with multiple services. From multiple networking opportunities, to outstanding webinars and training awards for trainees to work in other groups. From the travel and presentation awards at the annual ICAR gatherings to the up-to-date information in this newsletter. Women at all stages of their careers can interact with other most successful women in academia, government and industry duruing our Women In Science program. Our official publication, *Antiviral Research*, continues establishing itself as a leading publication in the specialty, and as an upper publications in virology in general. ISAR is a most active society, always seeking to provide us with what we all may need for a successful career in antiviral research.

This issue of ISAR News is focused in highlighting some of the activities of our society, including the upcoming 31st ICAR in Porto, Portugal, and the annual elections, at this time for President and members of the Board. We hope it will thus introduce, or refresh our memories about, all what our society has to offer. Perhaps, it will even entice all of us to bring new ideas for ways in which our society can provide us with the service, support, and opportunities we all need to keep on advancing antiviral research and the development of effective, safe, antiviral therapies and prophylactics. Our work is essential to control old and new viral threats and our society strives to support us in our mission.

31st ICAR, PORTO, PORTUGAL

Program Committee updates

Justin Julander and Mark Prichard

ISAR will host the 31st International Conference on Antiviral Research (31st ICAR) in Porto, Portugal from Monday, June 11th through Friday, June 15th 2018. The conference will be held at the Alfândega Conference Centre, Rua Nova Da Alfândega, Edificio Da Alfândega, 4050-430 Porto, Portugal. This scenic venue along the banks of the Douro River is conveniently located in the heart of Porto. Information on the ISAR website provides a list and links to a range of hotels in the area near the conference center (http://icar2018.tacon gresspco.com/?page=33). Hotel arrangements should be made soon, as Porto is a well-known tourist destination. The abstract submission site is also open and can be accessed through the ISAR website.

We have assembled an impressive line-up of invited speakers, who will update the attendees on recent advances in their research. Invited speakers and attendees with accepted abstracts will present their findings in several symposia covering a wide range of topics, including respiratory viruses, cytomegalovirus, emerging viruses, viral hepatitis and retroviruses. The conference will kick off at 2:00 pm on Monday, June 11th, after the Women in Science Roundtable, with a satellite workshop of the EU H2020 Consortium Antivirals. Following this workshop, keynote talks by Annelies Wilder-Smith and Jean-Michel Pawlotsky will set the stage for the meeting. A special symposium on recent technological advances, with

talks by Sarah Butcher and Tijn Brummelkamp, will finish off the talks for the day and will be followed by the opening reception.

Tuesday will include many great talks, and the Women in Science Award Lecture recipient, Angelle Desireee LeBeaud, will kick off the day with her lecture. Tuesday will also include talks on virus evolution by Philippe Lemey and Marco Vignuzzi, a talk covering Ebola treatment efforts by Sir Michael Jacobs, efforts to improve treatment of influenza by Davide Corti and Ron Fouchier, and treatment of RSV by Xavier Saelens. Selected abstracts will also be presented throughout the day as talks. The first group of approved abstracts will then be presented and discussed during the first poster session.

The great talks will continue on Wednesday with the Antonín Holý Memorial Award Lecture (Chris Meier) and will continue with a session on viral hepatitis, with invited talks from David Durantel and Percy Knolle. Other talks in the area of hepatitis and retroviruses, selected from the submitted abstracts, will be given prior to a lunch break. A new member and first time attendee networking luncheon will then be held, which will include a PechaKucha competition. This event will provide a fun and exciting way to hear the research of up-and-coming scientists, and even has a prize for the winner!

The Gertrude Elion Memorial Award Lecture (Paul Griffiths) will take place on Thursday morning, after which a Cytomegalovirus Symposium, including Paul Griffiths, William Britt, David Kimberlin and Randi Leavitt will take place. The afternoon will include the William Prusoff Young Investigator Award Lecture (Ester Ballana) and will be followed by a symposium on treatment and cure of HIV including Ole Schmeltz Sogaard, Angela Ciuffi and Nicolas Manel. The day will conclude with the second poster session and the closing reception and banquet, which as always will present opportunities for networking and socializing.

The conference concludes on Friday, beginning with student and young investigator shotgun presentations, which is always a fun and exciting session in which trainees who presented the best posters are given 5 minutes each to make an impromptu oral presentation of their work. Other pre-selected abstracts will be presented in the final two sessions and the meeting will then officially conclude at 12:30 pm, prior to lunch.

We are positive that the upcoming 31st ICAR will be yet another great annual gathering of antiviral researchers at all stages of their careers. This combination of experts in antiviral research working in academia, industry, government, NGO or any other setting will continue to push forward the progress of antiviral therapy. We look forward to seeing all of us in Porto!

PORTO: BEYOND THE SCIENCE

Joana Rocha-Pereira

The 31st ICAR will take place at the Alfândega conference center, located right at shores of the Douro river, in downtown Porto. The Alfândega (Customs House) played a prominent role in northern Portugal's commerce since the 13th century. Having moved around the city through the centuries, it eventually settled at its current location, directly linked to the railway system, in the mid-1800s. Having lost importance to both the airport and the shipping port of Leixões, it was recently transformed by the well-known Portuguese architect Eduardo Souto de Moura (Pritzker Prize-laureate) into a Museum of Transports and Communications & Congress Centre.

The Alfândega conference center

The VIII Ibero-American Summit (1998) was its inaugural act, marking the beginning of a new era for the Alfândega. The museum will be open to ICAR participants through the meeting. The temporary exhibits can be visited, but a ticket must be purchased.

The downtown district of Ribeira

The ICAR meeting will bring the attendees to the heart of Porto, engaging all of us in this old city's atmosphere of narrow steep "medieval" streets.

Although tourists have started to come in big numbers, the genuine "Portuense" character is found around every corner. Many of the houses in Ribeira are still inhabited by the locals, who hang their clothes to dry outside their windows as they always did. The local hang out at the local cafés, enjoying their expresso and pastel de nata (custard tart). The people of Porto like to talk loudly and party on the streets. Portuenses are very honest and direct; they welcome tourists but don't change their habits to accommodate them.

Palacio Da Bolsa

Although Portuenses cherish their traditions, there is also a thriving modern side to the city. Porto has an ample selection of art galleries and vintage stores. It is also the location of a prestigious university with over 30.000 students. The city has a strong business and commerce background, well-illustrated by the impressive Palácio da Bolsa, the headquarters of the city's Commerce Association. There is a growing number of startups in Porto, one of the many reasons why Porto was named this year as "The Best Start-up Friendly City of Europe by The World Business Angels Investment Forum".

There is a strong British influence in the city, dating back to medieval ages. The English princess Philippa of Lancaster married the Portuguese king John I in Porto, in the process sealing one of the many treaties between Portugal and Great Britain. Their wedding is depicted in one of the beautiful tiled walls of the São Bento train station (well worth a visit!). Their son, Henry the Navigator (Infante D. Henrique), who created the naval school and launched the age of Portuguese discoveries, was born in Porto (visit the Casa do Infante to learn more about him). To support his expeditions, the locals offered their meat for the sailors, keeping only the tripe (gut) to feed themselves. With it they created a dish called "Tripas à moda do Porto", and as a result they were given the nickname of **"tripeiros"** (tripe-eaters), which is still often used nowadays.

Today, however, the most typical Porto dish is the "Francesinha", a decadent sandwich inspired by the French croque monsieur, containing many layers of meat and a spicy sauce. After trying one at Café Santiago or Capa Negra II, you might find the energy to climb the 222 steps of the Clérigos tower, an important landmark and an excellent example of the romantic architecture by Nicolau Nasoni (more of Nasoni's work is scattered through the city).

A typical Francesinha

The commerce of Porto wine reinforced the British presence in recent centuries, presence which is particularly noted in the district of Cedofeita. The British presence is also very well portrayed in the books of Júlio Dinis, a 19th century Portuguese-British novelist.

When talking of the history of Porto wine, it is impossible not to mention D. Antónia Adelaide Ferreira, a true leader in the commerce of Porto wine and a "woman in science" of her time. Known as "Ferreirinha", an affectionate diminutive given by the working families who farmed her lands and vineyards, she modernized the vines and turned to the latest scientific innovations to fight against the phylloxera pest, which destroyed many vineyards in Europe. She invested in many new vineyards in the Douro Valley, especially in areas with good sunlight exposure. These vineyards still produce excellent table wines nowadays (besides Porto wine), under the "Casa Ferreirinha" label. We will hear much more about Ferreirinha during the tour to the Ferreira wine cellars just before the ICAR banquet.

To see how Porto still influences British culture, you can visit JK Rowling's favorite spots in the city, in which she lived for a number of years. Rumor has it that the first draft of Harry Potter was written in a napkin at Café Majestic and that the Lello Bookshop inspired Hogwarts scenery. The academy attire worn by the University of Porto students inspired that of the students of Hogwarts.

Lello Bookshop

Other places to visit around the city are the Casa da Música and the gardens and contemporary art museum of Serralves. These visits can easily be followed by a walk on the seaside in the Foz district and a dinner of grilled fish in Matosinhos, a nearby city with a fishing harbor. If you want to enjoy Porto's nightlife, you need only head to the downtown area of the "Galerias de Paris". To enjoy the best views in town, head to the monastery of Serra do Pilar, just across the D. Luis bridge.

If you arrive to Porto in advance to the ICAR, you will have the opportunity to attend the "Nos Primavera Sound", an eclectic music festival in the city park (June 7-9), or a concert by the Matosinhos Jazz Orchestra in the Casa da Música (June 9).

Casa da Música

I'm looking forward to another very fruitful ICAR meeting and I wish you have the best times in Porto!

Address and contact information for some places worth visiting while in Porto:

- Café Santiago, R. de Passos Manuel 226, +351 22 205 5797
- Capa Negra II, Rua do Campo Alegre 191, +351 22 607 8380
- Café Majestic, Rua Santa Catarina 112, +351 22 200 3887
- Lello Bookshop, R. das Carmelitas 144
- Casa da Música, Av. da Boavista 604-610, +351 220 120 220
- Museu e Casa de Serralves, Rua D. João de Castro, 210
- Restaurante Bar Galeria De Paris, R. da Galeria de Paris 67, +351 22 201 6218

All photos by Porto Conventions and Visitors Bureau

PORTO: KNOW BEFORE YOU TRAVEL

Regina Mohr

LANGUAGE: Portuguese, but English and French are quite common.
WEATHER: Expect sunny days in June, with warm and pleasant temperatures. The average maximum temperature in June is 73°F/23°C. The average minimum is 57°F/14°C.
TIME ZONE: GMT/ UTC + 1 hour in summer

CURRENCY: € (Euro)
The easiest way to get money is to use your bank debit card to withdraw cash from an ATM, known as a Multibanco. Make sure you have called your bank to authorize overseas use. Most European **debit cards** can also be used directly in shops, petrol stations etc., to pay for purchases. All major **credit cards** are accepted in hotels, restaurants and shops, and for tours, tickets and transport, though you should not count on being able to use them in many small hotels, family businesses and rural areas.

TELEPHONE: Country code is +351. Porto city code is 2. For emergencies, dial 112.

ELECTRICITY AND POWER: Portugal's electric grid is 230V/50Hz and uses "F" type sockets.

TIPS: Tipping is optional, but 10% is customary in taxis, restaurants and bars.

PASSPORT AND VISA: A valid passport (or identity card for European Community nationals) is required. Visas are not usually required for citizens of European Union countries, the U.S.A., Canada and many other countries. Please contact your local Portuguese Embassy, Consulate or your Travel Agency for official information before making your travel plans.

VAT REFUND: Visitors from countries outside the EU may obtain a refund of VAT (Value Added Tax) on goods purchased in Portugal and carried as personal luggage. Only individuals can have access to this refund. On buying, you must request a statement at the store, showing in detail the amount paid, the

goods purchased and the amount that can be refunded. You may get your refund in cash at major European airports, centers of the major European cities, or through your credit card or international check, provided that the goods have been previously shown to customs. Further information on the refund of VAT at: https:/www.premiertaxfree.com.

MEETING LOCATION: ALFÂNDEGA DO PORTO CONGRESS CENTRE

Voted the "Best Meeting & Conference Center in Europe for 2017, it is situated on the Douro River in the Historical Centre of the World Heritage Humanity Site. It is less than 30 minutes from the airport and train stations. The Alfândega is also home to the Museum of Transport and Communications as well as various rotating exhibitions, which will be accessible to ICAR attendees *(some of which may require a fee)*.

HOTELS: LOTS TO CHOOSE FROM BUT BOOK EARLY!

June is high season for tourism in Porto, so remember to book your room early. ISAR is working with a local agency, TA DMC, to help ICAR attendees in booking their hotel reservations. There are several hotel options from which to choose, ranging from €60-€200 per night. Please click on the following link to view the options and book your hotel now: http://icar2018.tacongresspco.com/?page=33.

GETTING TO AND AROUND IN PORTO:

- Francisco Sá Carneiro Airport – 11 kilometers (6 miles) from Porto city center with 17 airlines providing flights
- City is accessible from the airport by bus, metro or taxi.
- The Metro is open daily from 6:00 – 01:00. Porto´s metro has 6 lines that connect the city. Travel passes called "Andante Azul" can be purchased for single or bundles of 11 rides (for €1.20-5.20 or €12-52, respectively, depending on the zones to travel). As an alternative, Andante Tour tickets are 1 or 3 day passes valid to travel to any zone (€7 or €15, respectively). The closest metro station to the the Alfândega is "São Bento" (yellow line). For further information check: Metro do Porto

THINGS TO SEE AND DO IN PORTO: A WORLD CULTURAL HERITAGE SITE

- Tour a port cellar and sample port
- Try out some local food - The Francesinha ("Frenchy") is a five-layer sandwich typically filled with various types of meat, covered with cheese and then covered in a delicious tomato and beer sauce.
- Visit some of the many historic sites within the city, such as Porto Cathedral, São Francisco Church, Palácio da Bolsa or the Ponte de Dom Luis I
- Take a day trip to the Douro Valley, visit Aveiro – the "Venice of Portugal" or take a guided tour via boat or tuk tuk. View the many tour options and book your trip today at http://icar2018.tacongresspco.com/?page=36.

DID YOU KNOW……

- Portugal's national dish is **bacalhau**, dried and salted cod. There is said to be 365 different ways of cooking it – one for each day of the year
- Portugal is the earth's eighth largest **producer of wine** and supplies fifty percent of the world's **cork**.
- There are twelve **UNESCO World Heritage Sites** in mainland Portugal, including towns like Évora and Guimarães, the palaces of Sintra, rock art in the Côa valley, and national monuments at Batalha and Alcobaça.
- Porto's nickname is "**Invicta**" (unconquered) because the city withstood a siege of over a year during the 19th century Portuguese civil war.

FOR MORE INFORMATION:

- http://visitportoandnorth.travel
- http://www.visitporto.travel/Visitar/Paginas/default.aspx

All photos courtesy of:
https://www.flickr.com/photos/visitportoandnorth/sets/

WOMEN IN SCIENCE

Rhonda Cardin

The WIS Committee is excited to announce the **6th Annual Women in Science Roundtable**. This session, the first event on the first day of ICAR, will be held on Monday, June 11, from 12:00 – 1:45 PM. A late registration will be open 12:00-12:30 PM for those who had not registered online. It is open to women and men, and will feature discussions on the challenges and opportunities encountered by women scientists while navigating the twists and turns of career progression in today's environment in academia, industry or government.

Please join us to network with fellow scientists in industry, government, and academia who conduct all aspects of antiviral research. This roundtable will provide an opportunity to participate in a panel

discussion with our 2018 WIS Award recipient, Dr. Angelle Desiree LeBeaud, Stanford University School of Medicine; Dr. Joana Rocha-Pereira, Rega Institute KU Leuven; and Dr. Heather Greenstone, NIAID, NIH, as well as other antiviral research scientists.

This event is free, but it's limited to 80 participants, so register now! Select "Women in Science Roundtable" in the Events section when you register for ICAR. Drinks and light sandwiches will be provided.

AN OVERVIEW OF *ANTIVIRAL RESEARCH*, ISAR'S OFFICIAL JOURNAL

Mike Bray

Antiviral Research is actually 6 years older than the society. The first issue of AVR came out in 1981, while ISAR was formed in 1987, and the first ICAR was held in 1988. The journal was founded by Erik De Clercq and Alfons Billiau at the Rega Institute in Leuven. Their joint editorship reflected their complementary interests, with Erik covering medicinal chemistry and small-molecule drugs, and Alfons focusing on interferons and other biological products. In an editorial in the first pages of the first issue, Erik and Alfons expressed the goal that "we expect to publish review articles and original contributions covering the field of antiviral research in its applied, as well as its fundamental aspects."

In 1981, AVR published 39 papers. Looking at the authors of articles from the first few years of the journal, one sees many names familiar to ISAR members: Bill Prusoff, Hugh Field, Bob Sidwell, Bo Oberg, Diane Griffin, Don Smee, Fred Hayden and many others. By 1987, the yearly total had risen to 74, and Rich Whitley had replaced Alfons as co-editor-in-chief, with Earl Kern joining as a section editor. In the early 1990s, George Galasso became the editor for review articles. Once ISAR began to hold an annual meeting, AVR started devoting one entire issue to abstracts of oral presentations and posters. Because these could not actually be cited, and the abstract issue delayed publication of regular papers, this practice was discontinued in 2012.

By 2007, the annual total of published papers had increased to 116, and Erik, Rich and Earl had become joint editors-in-chief. George retired as the reviews editor, and I took his place. The year 2010 saw a major change, with Rich and Earl departing, and José Esté (Barcelona, Spain), Dale Barnard (Logan, Utah, USA) and Subhash Vasudevan (Singapore) joining as editors. In 2012, I replaced Erik as editor-in-chief, with José, Dale and Subhash continuing as editors.

During the next few years, and in response to a growing volume of manuscript submissions, we doubled the number of editors. Hui-Ling Yen (Hong Kong) joined to handle influenza papers, and Mark Prichard (Birmingham, AL, USA), David Durantel (Lyon, France) and Johan Neyts (Leuven, Belgium) became editors for other subject areas, as listed below. I continued to handle invited reviews and commentaries. After two years, Hui-Ling found that her academic career didn't allow time for editorial work, so at the beginning of 2015, Jenny McKimm-Breschkin (Melbourne, Australia) took her place, and we've continued with the same team ever since.

For most of the lifetime of AVR, all new manuscripts went directly to the editor-in-chief, who then distributed them to the editors. In 2012, we streamlined the process, so that new manuscripts are automatically assigned to editors by the EVISE system, based on the author's choice of a category. Papers on DNA viruses (herpes-, poxviruses, etc.) go to Mark; flaviviruses (dengue, Zika, etc.) to Subhash; respiratory viruses (influenza, paraflu, RSV) to Jenny; retroviruses to Jose; hepatitis B, C and D to David; viral diseases of animals to Johan; and RNA viruses not listed above to Dale.

Once an editor is assigned a new manuscript, they invite the reviewers, receive their reports, decide to revise or reject, then make the final decision on the revised manuscript. I become involved only if there are questions or problems. The system works very smoothly, so that in 2017 we published 253 articles, a record for the journal.

As stated in the *Guide for Authors*, the scope of AVR covers:

- antiviral drugs, antibodies and host-response modifiers, including their synthesis, *in vitro* and *in vivo* testing and mechanisms of action;
- new or improved vaccines against viral infections of humans;
- assessments of drug and vaccine safety;
- evolution of drug- or vaccine-resistant viruses and the development of effective countermeasures;
- laboratory animal models of viral diseases;
- identification and validation of new drug targets;
- pathogenesis of viral diseases and mechanisms of viral evasion of host immune responses.

Authors who would like to know if a proposed article is a good fit for the journal are encouraged to contact me or the editor who will handle the manuscript. We can be reached directly by email or by way of the journal manager at journalavr@elsevier.com

We've recently renewed the journal editorial board, which consists of 66 members serving three-year terms. The principal duty of EB members is to assist the editors by reviewing manuscripts, but they are also encouraged to submit review articles. Board members gather for an annual meeting at ICAR, in which a representative of Elsevier gives a presentation on the journal's performance during the past year, and board members may recommend changes in policy or practices, or raise new publishing opportunities.

At one time, AVR produced occasional special issues of invited articles, such as one in 2009 that marked the 25th anniversary of the introduction of antiretroviral therapy. However, because creation of a special journal issue inevitably causes major delays in publication for the first articles submitted, about five years ago we switched to a new "symposium" system, in which invited articles come out online as soon as they are approved. Current symposia featured on the AVR homepage are on flavivirus drug and vaccine discovery, highly pathogenic human coronaviruses ("From SARS to MERS") and hepatitis B drug development. Elsevier provides all symposium papers with six months of free online access and promotes them through social media. Also, each month the AVR editors choose a recent article from a regular issue to "highlight" with six months of free access and social media promotion. Photos and bios of the authors are posted in a special section of the journal website.

Many researchers are not aware that AVR has no page charges or other costs for publishing a paper. Like many journals nowadays, Elsevier offers the option of publishing Open Access, for a fee similar to that charged by "OA journals." Through this transaction, the author purchases the copyright to the paper, and may then distribute it in any way they choose. As an alternative, cost-free way of giving access to new papers, AVR authors are provided with a "share link," which makes their paper available for the first 50 days after publication to anyone who clicks on the link.

Although many researchers favor OA journals, I believe that our approach is more accommodating for young investigators with limited budgets and for scientists in developing countries, as it presents no financial barrier to publication. As regards access to papers, nowadays most researchers in universities, government agencies or other organizations can download any paper from AVR through their institutional subscription. Elsevier also makes many of its online journals available at no charge to scientists in a large number of resource-limited countries.

During the past few years, AVR's impact factor has wandered in a range between just-above-4 to just-under-5. (The IF is calculated as the total number of citations in a given year of papers published in the previous two years, divided by the total number of papers published in those two years.) In the 2017 issue of Thomson Reuters Journal Citation Reports, AVR's IF was 4.271, and was ranked 7th of the 34 journals in the Virology category.

I personally place little value on the IF as a measure of journal performance. Because review articles tend to be cited more than research reports, a journal can increase its IF by publishing lots of reviews, and we've seen ours go up when we've hosted special issues or symposia of invited papers. As everyone is aware, a journal can also increase its IF by refusing to consider research reports that are unlikely to be widely cited, but that has never been our policy.

When asked to describe AVR, I like to say that it is a well known, well respected upper-level journal that offers quick processing of submitted manuscripts, prompt reviews and careful decisions by knowledgeable and experienced editors. It's not a "top-tier" journal, so if you've made a truly breakthrough discovery and want to produce the maximum "splash," you might choose not to publish with us, but for good papers describing interesting research, you should always consider AVR.

Note: As this issue of ISAR News was going to press, Johan Neyts has decided to step down as an AVR editor (too many other responsibilities, at the Rega Institute and elsewhere), and Nesya Goris has taken his place as editor for manuscripts on viral

diseases of animals. Nesya was the subject of an Member Profile in ISAR News in 2014. She has a PhD in veterinary science and is the CDO and co-founder of ViroVet. We're happy to have her as a member of the AVR team.

BOOK INTRODUCTION
Lenti, when detective stories go viral
Paul Griffiths

"Write what you know" is advice readily available to those of us planning our first novel.

Well, I certainly know about viruses, having been head of the virology department at one of London's teaching hospitals, UCL/Royal Free, for more than thirty years.

I have been interested in writing more than scientific papers for many years and have always thought that the field I work in would lend itself to a crime story. It also occurred to me that my specialty is commonly used to create a hero, someone who is going to save the world from some dastardly infection. But what would happen if it created a villain? An academic researcher gone bad…

The plot would need to be sufficiently scientifically credible to satisfy my colleagues but not so full of technical jargon as to put off non-scientific readers. To create a plausible story, I would need a perpetrator of the crime, a detective in chase and possibly a hero who saves the day. I then had to create a back story to explain how someone whose daily work focuses on the prevention of disease could suddenly flip to become evil. In *Lenti*, this back story comes out slowly as the file cards, which this meticulous person has kept to document their life, are revealed slowly to the reader.

I found I needed some means of explaining the technical aspects in simple terms and so used the device of a Professor explaining to a police Inspector the significance of findings as they occurred. The Professor could be wise and all knowing, while the Inspector is less so. As I wrote the story, I so enjoyed discovering the flawed personality of Bill Painter that I have another book underway featuring the Inspector…

In the powerful role as author, I had free rein to get characters to behave appallingly. I also allowed the objectives of scientific experiments to be achieved without problems and to be published rapidly with only glowing comments from peer reviewers (if only that were true in the real world!). The pace of scientific progress is enticingly more rapid than usual. In summary, my book explores what would happen if a virologist goes off the rails. It follows the police investigation that tries to unravel the crime. It is a fast-paced thriller, with many twists and turns aimed for reader enjoyment. The story is novel, the characters interesting and the outcome surprising.

If you read *Lenti*, please post a comment on Amazon to let me know what you think.

ISAR WEBINARS: Bringing state-of-the-art antiviral research to a wide audience
Raj Kalkeri and Aruna Sampath

The ISAR webinar series is now in its second year and going strong. There have been 10 talks to date, and a presentation is scheduled for later this month, with more in the planning stages. Raj Kalkeri founded the program and has been handling the logistics for each event; Aruna Sampath and Kara Carter have helped with planning and have co-hosted webinars with Raj; and Mike Bray has helped with planning. Although they are primarily aimed at ISAR members, the webinars are available to any researcher who logs in through the GoToWebinar link. However, the archived files on the society website are accessible only to members.

The series began in the fall of 2016, when the Zika epidemic was headline news, and has since covered a wide range of topics:

- October, 2016: Scott Weaver (UTMB Galveston) spoke on Zika virus emergence, biology, disease models and prospects for control
- December, 2016: Rick Wobbe (InnovaTID) talked about antiviral high-throughput screens and assays, in a presentation that was very helpful for those new to the field
- January, 2017: Charlie Rice (Rockefeller U) gave an overview of hepatitis C virus research, including a historical overview, the molecular biology of the virus and the drug discovery efforts leading to a cure
- February, 2017: Laura Sepp-Lorenzo (Alnylam) spoke about RNAi technology platforms for delivery to target tissues and the development of ALN-HBV as a potential cure for hepatitis B
- March, 2017: Erik de Clercq (KU Leuven) reviewed the early history of NATO-sponsored

meetings on antiviral agents, which evolved into ISAR, and shared the story of the HIV reverse transcriptase inhibitor, tenofovir

- April, 2017: James Crowe (Vanderbilt U Vaccine Center) discussed mechanisms of neutralization of viruses mediated by human antibodies
- November, 2017: Erica Ollmann Saphire (Scripps Research Institute) described the effort of the Viral Hemorrhagic Fever Immunotherapeutic Consortium to find effective antibody therapies for filovirus and arenavirus infections
- December, 2017: Johan Neyts (KU Leuven) discussed accomplishments and challenges in antiviral research, including efforts by his lab to discover inhibitors of flavivirus NS4B, alphavirus nsP1 and enterovirus 2C, and the Rega Institute's "lab-in-a-box" system
- January, 2018: Mike Diamond (Washington U, St Louis) reviewed his team's work on CRISPR-Cas9-based target identification for novel flavivirus therapies
- February, 2018: Pei Yong-Shi (UTMB Galveston) spoke on Zika virus, focusing on the mechanisms for enhanced disease and reviewing current vaccine development.

Brent Korba at Georgetown University will give a webinar on March 29th, describing laboratory methods currently available for the study of norovirus replication and the testing of antivirals. The speaker for April has yet to be determined.

How can you support the ISAR webinar series? Besides logging in to enjoy each lecture, there are three ways you can help make the program a success:

1. Publicize the webinars, by forwarding the email announcements to colleagues and to online groups of which you're a member. Raj, Aruna, Kara and Mike forward the webinar announcement to numerous listservs, so that hundreds of researchers outside of ISAR receive the invitations. (Besides increasing participation in the webinars, notices with "ISAR" in the subject line are a good way to publicize our society.)
2. Suggest a speaker. If you know someone who has recently presented their research at a conference or other setting, in a talk that could be adapted to the webinar format, please send us your suggestions.
3. Deliver a webinar. If you have a lecture that you've prepared for a meeting or for teaching, and you would like to share it with ISAR members, contact the webinar committee:

- Raj Kalkeri rkalkeri@southernresearch.org
- Aruna Sampath sampatha1@ebsi.com
- Mike Bray mikebrayavr@gmail.com
- Kara Carter kara.carter@sanofi.com

We're looking forward to seeing you through the second season of the exciting ISAR Webinars

TRAINING OPPORTUNITIES

The Chu Family Foundation scholarships for Early Career Women in Science awards
Kathie Seley-Radtke, Chair

The Chu Family Foundation Scholarships were initiated by The Chu Family Foundation (TCFF) together with both the International Society for Antiviral Research (within ISAR) or the International Society of Nucleosides, Nucleotides and Nucleic Acids (within IS3NA). The TCFF support the professional development of early career level women who have shown the potential for significant contribution in the field of antiviral research (ISAR) or nucleoside/tide and/or nucleic acid research (IS3NA). The scholarships provide funds to attend specialized workshops, visit or work in another laboratory to obtain new skills, take courses, or acquire specialized training in any other way.

Johanna Huchting was one of the 2016 IS3NA TCFF winners and she presented some of the findings from her TCFF experience at the 30th ICAR meeting in Atlanta (2017). She was recently interviewed by Kathie Seley-Radtke about her experiences and the benefits provided by the TCFF awards offered by both Societies.

Q. What did you specifically do with the TCFF award money?

A. I used it to cover the double rent I had to pay (my own apartment and the apartment I stayed in during the visit) during my three month visit to a different lab as well as my travel and living costs.

Q. What factors influenced your decision to apply for the (IS3NA) TCFF award?

A. When I started my project in Prof. Chris Meier's laboratory, many people told me I would eventually have to change labs to complete my training before becoming an independent investigator. In addition, I wanted to learn the molecular biology of my project. Our group already had a long-standing collaboration with Prof. Lieve Naesens and other groups at the Rega Institute in Leuven, Belgium. Nonetheless, I felt it would be more meaningful to actually learn the techniques myself. I just needed the inspiration to organize a visit to another lab and to actually do it! Being in a different laboratory was important, especially in Germany. The German system is very strict in that one should not stay in the same

university when becoming an independent investigator. When Prof. Meier told me about this award, I got very excited because the goals of the award perfectly matched my own.

Q. What benefits did you originally think would come out of the TCFF award? Did you think it would have an impact on your career?

A. Yes, it will definitely have an impact, and on several levels. I felt strongly that becoming even more visible to the nucleoside community would be very important for my career. I want to keep on working in nucleosides and nucleic acid chemistry – I love this science. Becoming more visible in the ISN3A Society, and in the field in general, was critical. I also felt it was important for me to learn the molecular biology techniques which would then expand my skillset and enable me to be more successful when choosing or designing projects in my future independent career. Also, getting to know people from a different country and being exposed to how everything is done in other laboratories was exciting!

Q. What was your overall experience during the visit?

A. It was a really, really, good experience! I would highly recommend to go visiting another laboratory to anybody who has an opportunity. Everybody was very friendly and open; they were extremely helpful, and patient - even whenever I forgot anything! They trusted me to work with all of their cells and I was comfortable asking any and all questions I had. I felt very welcome. I felt like I was a part of their lab from day one and that was a great feeling. In addition, I was really challenged by the project which was very good for me, as that was exactly what I wanted – I wanted to meet the challenges head on.

Q. Do you think the opportunity provided by the TCFF award met your expectations?

A. It more than met them! I didn't expect to learn these many things in just three months, particularly in another lab in another country; and the results I obtained were fantastic, too! The friendships I made were incredible! I became close with my new lab mates and I even invited Lieve Naesens and her postdoc, Evelien Vanderlinden, to Germany where we had a little symposium. It was great – I did not expect to make such close friendships in addition to the scientific collaborations. The results were also amazing – we did so many experiments and got so many great results. Evelien helped me to design the experiments and taught me how to do them. She then continued doing the experiments after I left; we produced much more than the great results we had already achieved during the three months I was there.

Q. How do you think this experience benefited you?

A. Exactly along the ways I had hoped– I learned new techniques that I want to continue to use. I met people and expanded my visibility in the scientific community. The experience also provided me the motivation and desire to apply for a fellowship that will allow me to go back to their lab for six more months, to continue our collaboration and learn additional techniques.

Q. How do you think this award will impact your career in the long run?

A. I think that thanks to this experience, I am now brave enough to take on new projects involving both chemistry and molecular biology without hesitation. I learned I can do anything I set myself to. It is also very good to have this experience on my CV, which increases my visibility, fostering my career.

Q. Has the award impacted your career already?

A. Very much so! I already presented my results at last ICAR in Atlanta in May 2017 *(30th ICAR, May 21-25 2017, Atlanta, Georgia- USA*) – I was selected for an oral presentation and I also presented a poster, together with Evelien. We even won the first prize Award - $1000!! *(Postdoctoral category, first prize)*. In addition, it also helped me earn two other awards. One is a €30,000 award recognizing the research I have already completed in this project. The other one is the fellowship to visit the Naesens laboratory in Leuven again for six months. The fellowship starts in April and will cover all my living and travel expenses during the visit. I wouldn't haven't earned either award without having had the Chu fellowship first. In addition, we are now finalizing a publication describing our results collected through this award, which will be submitted in the next few weeks.

Q. Any final thoughts?

A. It is very important for me to thank the Chu Family for supporting these awards for young women scientists and also to thank you (Kathie Seley-Radtke) for having proposed these awards in the first place when you were President of IS3NA! It is a fantastic award which has really helped my career. I would also like to really encourage other young women scientists to apply for this award, it really allows great things to happen!!

ISAR ELECTIONS

Luis M. Schang

This year, the nominations committee was tasked with identifying candidates for the Board of Directors and President positions. As always, candidates were selected from a very strong pool. It is now up to all of us ISAR members to select who will represent and lead our society for the coming years. Don't forget to vote!

The candidates for president are:

- Andrea Brancale
- Kara Carter

Andrea Brancale

Andrea is a Professor in Medicinal Chemistry at Cardiff University. He undertook his Ph.D. and postdoctoral work in synthetic medicinal chemistry under Professor Chris McGuigan, focusing on the design and synthesis of novel nucleosides and nucleotides as potential anticancer and antiviral drugs. With his appointment as lecturer in the Cardiff School of Pharmacy and Pharmaceutical Sciences, he strategically directed his research interests on the use of computer-aided techniques to design and discover novel anti-viral and anti-cancer compounds.

In 2017, he was promoted to Professor and he continued to establish his reputation as an internationally recognized drug design expert in the antiviral and anticancer field. He is author of more than 130 peer-review papers and actively collaborates with several academic groups in the UK and the rest of the world. His focus in drug discovery and development emerges also from his strong connection with the private sector. He was a scientific consultant for the NASDAQ-listed biotech Synergy Pharmaceuticals and for the NASDAQ listed biotech Inhibitex. He is an active member of ISAR: he is an elected ISAR Board member, and he has been the Chair of the ISAR Website Committee since 2008. He is also a member of the Membership and Program Committees. In 2013, Andrea was presented with the Young Researcher William Prusoff Award for his contribution to the antiviral field. Currently, he is also the Editor-in-Chief of Antiviral Chemistry and Chemotherapy.

Kara Carter

Kara is Head of Antiviral Drug Discovery at Sanofi. She started her virology journey as an undergraduate at Stanford University in the laboratories of Dr. Ann Arvin and Dr. Charles Prober, working in collaboration with Chiron to develop a diagnostic to differentiate between HSV-1 and HSV-2 infection. Her graduate work was in the laboratory of Dr. Bernard Roizman at the University of Chicago, studying molecular virology of HSV and receiving her PhD in 1996. As an NSF funded post-doc in the laboratory of Dr. Elliott Kieff at Harvard University she studied EBV transformation of human B cells, applying the emerging technology of transcriptional profiling in collaboration with Lou Staudt's lab to characterize LCLs and established EBV containing cell lines.

Moving into industry, at both PRAECIS Pharmaceuticals and Genzyme Corporation, Kara led a number of virology, immunology and oncology

programs focusing mostly on small molecule drug discovery. While at Genzyme, she also played a role in the antiviral in-licensing efforts at Genzyme to support the transplant business unit and contributed to the acquisition of AnorMED. After Sanofi acquired Genzyme, Kara spent two years supporting in-licensing activities in Infectious Disease, Immunology, Multiple Sclerosis, and Rare Disease while working with the Infectious Disease unit to develop a strategy to start internal virology drug discovery.

During this cross-training tenure in Business Development, she participated in five major in-licensing deals. In 2014, Kara founded the Antiviral Drug Discovery group at Sanofi focusing on HBV and HIV cure initiatives, emerging infections and viral respiratory diseases and managing a global team in the US, France and China. As part of this work, major collaborations have been established with INSERM, Institute Pasteur Shanghai, Fudan University, Vanderbilt University, Oregon Health Sciences University and NIAID.

Since the start of this group, Sanofi virology has moved two programs into preclinical development with first in man studies planned for late 2018 and will shortly be initiating two POC studies, one each in HIV and HBV. Kara serves on the SAB for the Antiviral Drug Discovery and Development Center. A member of ISAR for 15 years, Kara has served on several committees including Finance, New Member, Publication and Women in Science. She has been a mentor through the ISAR Women in Science program and co-leads the ISAR Webinar Series.

Candidates for the two open seats on the Board of Directors

- Bob Buckheit
- Chris Meier
- Joana Rocha-Pereira
- Aruna Sampath
- Pei-Yong Shi

Robert W. Buckheit, Jr.

Since 1989, Bob has been intimately involved in the preclinical development of therapeutic and preventative anti-infective agents with a focus on agents for use against HIV, HBV and respiratory viruses, as well as drug resistant microorganisms. Dr. Buckheit has developed and managed infectious disease research programs for biotechnology, pharmaceutical, academic and government organizations, including a variety of multi-million dollar and technically complex federal contracts, hundreds of programs with virtual and small biotechnology companies, research programs with pharmaceutical industry companies, and collaborative programs with academic investigators. Bob's experience with anti-infective evaluations includes the evaluation of well over 500,000 anti-infective molecules and has resulted in over 200 publications in the peer reviewed literature as well as dozens of projects that have progressed compounds to the IND stage of drug development.

Bob founded ImQuest BioSciences in February 2004 and is ImQuest's President and Chief Scientific Officer. ImQuest provides services to the

government and pharmaceutical and biotechnology sectors and collaborates with academic investigators. The company is dedicated to providing technical and professional support for the development of a broad spectrum of therapeutic agents and topical microbicides, including anti-infective and anti-cancer agents as well as treatments for other diverse human diseases such as inflammatory and autoimmune diseases.

Bob is also a founder of two biopharmaceutical companies (ImQuest Pharmaceuticals and Lubrinovation, Inc.) which develop products derived from the operations of ImQuest BioSciences. ImQuest BioSciences has been awarded as Frederick County's Small Business of the Year, Bob was honored as an Entrepreneur of the Year by the Maryland Technology Council, and ImQuest has twice been named Best Places to Work in Frederick County.

Bob earned his Ph.D. in 1986 from the Department of Microbiology and Immunology at Duke University Medical Center. After obtaining his doctoral degree, he joined the molecular retrovirology laboratory of Dr. Ronald Swanstrom as a postdoctoral fellow. Bob joined Southern Research Institute in 1989, starting as a Research Scientist in the Birmingham, Alabama-based Microbiology Research Department and advancing to the role of Director of Infectious Disease Research in Southern's Frederick, MD facilities. In 2002, he joined TherImmune Research Corporation as Director of Infectious Disease, Cancer and Immunology Research.

Bob has been a long-time member of ISAR and has attended nearly all of the conferences of the Society. During his many years of association with the Society he has served in many roles, including participation or leadership of the Membership Committee, Poster Awards Committee, and Program Committee. Most recently, Bob has nearly completed his six-year term as President of the Society. At the conclusion of his term as Past President this year at the meeting in Porto Bob hopes to continue his involvement with ISAR as a member of the ISAR Board of Director's bringing his many years of knowledge and experience of Society operations to this new role.

Chris Meier

Chris Meier, born in 1962 in Berlin, Germany, received a diploma and a doctorate (Ph.D.) in Chemistry from the University of Marburg, Germany. During his Ph.D. thesis, he worked in the group of Prof. Gernot Boche on the synthesis of so-called ultimate carcinogens formed from aromatic amines by metabolic steps, metabolites which are involved in the induction of the chemical carcinogenesis. He joined the Organic Chemistry Division at the Pasteur-Institute in Paris, France, headed by Prof. Jean Igolen and Prof. Tam Huynh-Dinh as a Post-Doc and started working on nucleoside chemistry and prodrugs. He returned to Germany joining the University of Frankfurt/Main in 1991 as an Assistant Professor under the mentorship of Prof. Joachim Engels.

In 1996, Chris obtained the Habilitation in Organic Chemistry from the University of Frankfurt/Main, Germany. He was appointed as Associate Professor at the University of Würzburg, Germany and then in 1999 he joined University of Hamburg, Germany as a full professor. He is the Scientific Director of the Centre for Structural Systems Biology (CSSB) in Hamburg. Moreover, he is the current President elect of the International Society on Nucleoside, Nucleotides and Nucleic Acids (IS3NA), after being Vice-President the previous two years.

Chris received the ISAR Prusoff Award in 2007 and will receive the Antonín Holý Memorial Award in 2018. He was involved with ISAR since many years ago, serving as chair of the program committee "medicinal chemistry" and being a long-standing member of the poster award committee. Recently, he was awarded as being a Zhiquiang-guest professor

from Shanghai University, China, and he has worked as an invited guest professor and visiting professor at the University of Montpellier II and Toulouse, France, and Shanghai, China. His research focuses are pronucleotide development, nucleoside chemistry, structure-based drug design of small molecule antivirals against *Bunyaviridae* and hemorrhagic fever viruses, carbohydrate chemistry, phosphorylation methods in nucleoside chemistry and the synthesis of photocaged compounds, e.g. second messengers. He has published more than 220 scientific publications and is an inventor of record in 10 issued patents.

Joana Rocha-Pereira

Joana Rocha-Pereira is a Research Associate in the laboratory of Prof. Johan Neyts, at the Rega Institute for Medical Research, in Leuven (Belgium). Joana started her research career studying the replication of noroviruses in 2008, after graduating in Pharmaceutical Sciences at the University of Porto, Portugal. She obtained a PhD degree in 2013 for her work on the identification of small molecule inhibitors of the replication of noroviruses. Since then, she joined the Neyts lab, where she has optimized norovirus mouse models of infection. As a part of her Marie Curie fellowship, she has been leading the biology efforts on a norovirus drug discovery campaign together with the Center for Drug Design and Discovery (CD3).

Her research interests extend to other enteric viruses and to bunyaviruses, on which she worked as a team member in two EU-funded consortia. She is the author of 15 papers in peer-reviewed journals (11 of which as first author) and has given a number of lectures on the topic of norovirus at international meetings. Joana is an Associate Editor of *Antiviral Chemistry and Chemotherapy* and a member of the Editorial Board of *Frontiers in Pharmacology*.

Joana first attended the 25th ICAR in Sapporo, Japan (2012) and since then has become an enthusiastic and active member of ISAR. She is currently a member of the Publications, Membership, Poster Award, and The Chu Family Foundation Scholarship for Early Career Women in Science Committees.

Aruna Sampath

Aruna Sampath received her Ph.D. degree in Biochemistry (on protein engineering using phage display technology) from the University of Delhi, India, in 1999. Prior to that, she received a Bachelor's in Biochemistry from the University of Delhi, India, and a Master's degree in Biotechnology at Madurai Kamaraj University, India.

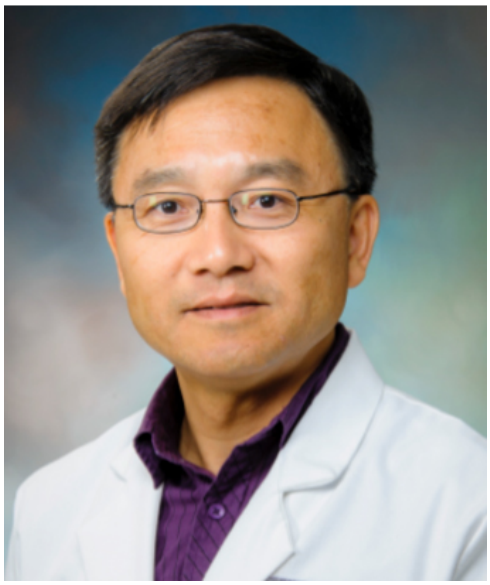
Aruna trained as a postdoctoral fellow at the University of Illinois, Chicago where she studied human papillomavirus E6 and E7 oncoproteins and their role in initiating tumorigenesis. She later moved to Rice University in Houston, TX where she studied the host take over mechanism of SPO1 bacteriophages. She joined the Novartis Institute for Tropical Diseases (NITD), Singapore, in 2003 as a Principal Investigator and program team head for a dengue antiviral drug discovery program. In this role, she was responsible for developing functional assays to screen drug targets, managed structure-based drug discovery efforts (fragment based and in silico screening) and leading

medium and high throughput antiviral screens (> 1.2 million compounds) against dengue helicase.

Aruna moved to Maryland in 2007 and took on the role of project manager for an anti-malarial consortium, a joint effort by the University of Mississippi, Olemiss, MS, and Walter Reed Army Institute of Research, Silver Spring, MD with a total funding of $8.7M. In this role, she managed research efforts by six institutes leading to development of *in silico*, *in vitro,* and animal models predictive of hemolytic toxicity of 8-Aminoquinolines. In 2010, she took on the role of program manager for the Broad Spectrum Antimicrobials group at the Biomedical Advanced Research and Development Authority (BARDA) where she was the technical lead and program manager for advanced research and development and procurement contracts with a total budget of ~ $550M.

Aruna joined Unither Virology LLC in 2012 as a program manager and later assumed the role of the principal investigator for a federal contract with a total funding of $45M. In this program, she led the scientific work involved in the development of a broad-spectrum dengue antiviral drugs. After the acquisition of Unither Virology by Emergent Biosolutions in 2015, she joined Emergent Biosolutions as Senior Director, Product Development. In Emergent, she has led product development activities for a dengue antiviral, Zika vaccine, and the next generation anthrax vaccine with a budget of over $230M, as well as the product and site integration activities after the acquisition of ACAM2000 (from Sanofi) in 2017.

Aruna has authored several peer-reviewed publications on the different research projects and products she has worked on. She is a member of the ISAR publications committee, where she has been the guest editor of ISAR News and has been a co-organizer of the ISAR webinars.



Pei-Yong Shi

Pei-Yong is the I.H. Kempner Professor of Human Genetics of the University of Texas Medical Branch. He received his B.Sc. from the Nanhing Normal University, China in 1989 and his Ph.D. from Georgia State University, USA, in 1995. He then completed his postdoctoral training in 1988 in Yale University, School of Medicine.

Pei-Yong has been working on flavivirus replication, antiviral drug discovery, and vaccine research for 27 years. His unique experience in public health laboratory (Wadsworth Center, New York State Department of Health; 8 years), pharmaceutical companies (Novartis and Bristol-Myers Squibb; total 10 years), and academia (University of Texas Medical Branch, Yale, and other universities; total 9 years) allows his work to focus on the interface between basic and translational research.

His basic research illuminates the mechanism of viral replication that could be utilized for the development of novel diagnosis, antivirals, and vaccines. In return, his translational research provides unique tools and systems to discover the molecular mechanism of viral replication. Pei-Yong has published over 230 peer-reviewed papers in the leading journals in virology and general sciences, including Nature, Science, Cell, PNAS, Host Cell & Microbe, and PLOS Pathogens. His work has generated bodies of knowledge that have significantly advanced our understanding of flavivirus replication, diagnostics, antiviral discovery, and vaccine development.

Besides his academic excellence, Pei-Yong has an also strong track record of senior leadership role at

leading pharmaceutical company (e.g., Executive Director at Novartis Institute for Tropical Diseases) where he set up antiviral strategies and executed drug discovery and development. He aspires to integrate his expertise in academia, industry, and goverment to advance basic and translational research. His recent work on Zika virus has established the first reverse genetic system for the virus, developed a live-attenuated vaccine currently advancing to clinical trial, developed rapid diagnostic assays currently under FDA approval, and identified genetic changes that may contribute to the recent explosion of Zika epidemics.

ISAR News is an official publication of the International Society for Antiviral Research. It is published four times a year as a free article in *Antiviral Research* (http://www.journals.elsevier.com/antiviral-research) and is posted on the ISAR website (http://www.isar-icar.com).

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