ISAR News
Newsletter of the International Society for Antiviral Research

Editor Anthony Vere Hodge  Guest editor Simon Tucker
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Update on the 30th International Conference on Antiviral Research (30th ICAR)
Atlanta, Georgia, USA May 21-25, 2017

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ISAR PRESIDENT’S MESSAGE
(José Esté)
It is with great pleasure that I salute all ISAR members and friends in this new issue of ISAR News.

We are now moving at full speed towards the 30th International Conference on Antiviral Research (ICAR) that will be held in Atlanta, Georgia, USA, beginning on May 21, 2017, and concluding on May 25, 2017. We are putting together an exciting program with the participation of leading scientists in the fields of antiviral research and drug development, but also in the fundamental principles that provide the basis for new drugs and treatment strategies. Importantly, the overarching nature of the conference will allow for the dissemination of knowledge across different fields and disciplines, providing participants, and particularly, young scientists, with an ample perspective on antiviral drug development. ICAR is an excellent opportunity to see, hear and meet stakeholders in all fields of antiviral research: academic, industrial and clinical.

Lectures by Ann Palmenberg (University of Wisconsin-Madison), Mark A. Pallansch (Centers for Disease Control and Prevention), Eric Hunter (Emory University) and Pei Yong Shi (University of Texas Medical Branch) will set the stage and will be followed
by symposia focused on Emerging Viruses and Antiviral Immunity.

The meeting will provide ample time and space for abstract-driven presentations in these and all fields of antiviral research, including hepatitis drug development and medicinal chemistry. Additional activities will include the Drug Development 101 course, New Member and First Time Attendee Networking events, a Career Development Panel and the Women in Science (WIS) roundtable. The 30th ICAR participants will be able to attend a lecture by the first WIS-sponsored speaker, Priscilla Yang (Harvard Medical School). ICAR will also be the time to highlight the work of outstanding scientists who have contributed to antiviral research; once more we will present the Gertrude Elion Memorial Lecture Award, the Antonín Holý Memorial Lecture Award and the William Prusoff Young Investigator Lecture Award.

I take the occasion to particularly invite and encourage student and young researcher participation. The society is prepared to actively support the participation of students, postdocs and early career investigators wishing to present their best science at ICAR. Abstract submission and applications for support are open until February 17, 2017. Visit the ISAR-ICAR website (http://www.isar-icar.com) for instructions in how to submit an abstract and apply for funding.

I encourage all ISAR members and those with an interest in antiviral research to attend the meeting and participate in the multiple activities we have to offer. We want to hear your thoughts and opinions on what is important to you. Please feel free to contact us at info@isaricar.com.

We look forward to meeting you in Atlanta.

30th International Conference on Antiviral Research (ICAR)

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Agenda-at-a-Glance

SUNDAY, MAY 21

12:00 pm-1:45 pm
Women in Science Roundtable
This session is open to all ICAR attendees, both women and men, and will address the challenges and opportunities encountered by female scientists while navigating the twists and turns of career progression in today’s environment. This session affords the opportunity for scientists to discuss and exchange ideas on a variety of different topics.

2:00 pm-4:00 pm
Drug Development 101

4:30pm-6:30pm
Welcome/Keynote Address

Ann Palmenberg, Ph.D. (University of Wisconsin Madison)

Mark A. Pallansch, Ph.D. (Centers for Disease Control and Prevention)

6:30 pm-8:30 pm
Opening Reception

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MONDAY, MAY 22

8:30 am-9:00 am
Keynote Address

Eric Hunter, Ph.D. (Emory University)

9:00 am-12:30 am
Antiviral Immunity Symposium

Priscilla Yang, Ph.D. (Harvard Medical School)

Jeff Murry, Ph.D. (Gilead Sciences)

Adolfo Garcia-Sastre, Ph.D. (Icahn School of Medicine at Mount Sinai)

Galit Alter, Ph.D. (Harvard Medical School)

Ulrike Protzer, Ph.D. (TUM School of Medicine)

2:00 pm-2:45 pm
Gertrude Elion Award Lecture

2:45 pm-5:00 pm
Short oral presentations

5:00 pm-7:00pm
Poster Session 1
UPDATE ON THE 30th ICAR

MESSAGE FROM THE PROGRAM COMMITTEE  
(Mark Prichard and Justin Julander)

I. Introduction
The International Society for Antiviral Research (ISAR) will host the 30th International Conference on Antiviral Research (30th ICAR) in Atlanta, Georgia, USA from Sunday, May 21st through Thursday, May 25th, 2017. The conference will be held at the Hilton Atlanta, 255 Courtland Street NA, Atlanta, Georgia. This venue takes advantage of the energetic research community that includes the Centers for Disease Control and Prevention as well as Emory University.

Speakers at the meeting will present the latest scientific developments in antiviral research and will emphasize the interdisciplinary nature of this field. The conference is designed specifically to provide opportunities for all participants to establish and maintain close collaborative relationships among chemists, pharmacologists, biologists and regulatory agency representatives that are required for the discovery and development of effective antiviral therapies. It also serves to stimulate innovative thinking on the drug development process and provides specific events to welcome new scientists to our ranks and to help them to establish successful careers. Attending this annual meeting is important for all ISAR members as it serves to strengthen existing contacts and provides an opportunity to add new contacts to their network by meeting scientists working in the field.
The program will feature a symposium on emerging viruses, an Antiviral Immunity Symposium, and the regularly scheduled Drug Development 101. Other regularly scheduled talks include four Keynote Addresses and three award lectures with more details forthcoming in the next issue of ISAR news. Annual oral sessions on in vitro antiviral activity, medicinal chemistry, mechanism of action, animal models and clinical trials are also scheduled. Poster Sessions provide a great opportunity for students and investigators to present data. The meeting will also include networking opportunities for new members including Women in Science Roundtable, Career Development session and a networking event.

II. Keynote Addresses
The 30th ICAR will formally commence on May 21st, 2017 at 4:30 PM and will be marked by two Keynote Speakers, Dr. Ann Palmenberg and Dr. Mark A. Pallansch:

Ann Palmenberg, Ph.D. (University of Wisconsin at Madison)

Historical Context and Biological Enigma of Rhinovirus C

Summary:
The asthma-linked viruses in the rhinovirus C (RV-C) species were discovered in 2006 as part of the SARS surveillance efforts. Structurally distinct from the RV-A or RV-B, the unique topography of these capsids make the 55 genotypes refractive to common antivirals and also switch the virus receptor preference to cadherin-related family member 3 (CDHR3). A (current) minor allele of this gene encoding Tyr529, is one of the strongest known medical correlates for childhood asthma exacerbations. In contrast, CDHR3 with Cys529 (>90% of modern human populations) is not well displayed on cell surfaces, minimizing virus accessibility and infection potential. Extensive paleogenomics data-mining suggests that Tyr529, the dominant hominid ancestral sequence, became a major human genetic liability, worldwide, in a timeline that converges on the emergence of RV-C from the RV-A, about 6-10,000 years ago.

Mark A. Pallansch, Ph.D. (Centers for Disease Control and Prevention)

Antivirals at the interface with public health: a case study of polio

Dr. Eric Hunter will give a Keynote Address on Monday, May 22 just prior to the Antiviral Immunity Seminar:

Eric Hunter, Ph.D. (Emory University)

Impact of transmitted HIV phenotype on host-virus interactions and disease progression

Summary:
I will describe how, despite a genetic bottleneck during transmission, viruses with strikingly different replicative capacities and immune-adaptation to their new host establish infection. I will present evidence that these phenotypic characteristics can influence early inflammatory responses, later immune control and disease progression, as well as anti-retroviral susceptibility

The final Keynote Address will be given by Dr. Pei-Yong Shi on Wednesday, May 24 as a kickoff to the Emerging Virus Symposium:

Pei-Yong Shi, Ph.D. (University of Texas Medical Branch)

Zika Antiviral and Vaccine Development

Summary:
Many flaviviruses are significant human pathogens, including Zika, dengue, yellow fever, West Nile viruses, Japanese encephalitis, and tick-borne viruses. No clinically approved therapy is currently available for treatment of flavivirus infection. In this presentation, I will discuss the progresses and challenges that have been encountered in flavivirus drug discovery. I will particularly highlight the advancement on antiviral and vaccine development for the recently emerged Zika virus.

III. Scientific Sessions
This year the meeting will feature the following scientific sessions:

Antiviral Immunity
Priscilla Yang, Ph.D. (Harvard Medical School)
Jeff Murry, Ph.D. (Gilead Sciences)
Adolfo Garcia-Sastre, Ph.D. (Icahn School of Medicine at Mount Sinai)
Galit Alter, Ph.D. (Harvard Medical School)
Ulrike Protzer, Ph.D. (TUM School of Medicine)

Emerging Viruses
Christina Spiropoulou, Ph.D. (Centers for Disease Control and Prevention)
David safronetz, Ph.D. (Public Health Agency of Canada)
Mariano Garcia-Blanco, M.D., Ph.D. (University of Texas Medical Branch)
Tim Sheehan, Ph.D. (UNC, Gillings School of Global Public Health)

IV. Awards

Each year ICAR features a Poster Awards competition and this tradition will continue in 2017. This year the Poster Award Committee, which is chaired by Kathie Seley-Radke, will review the candidates for awards. In past years, the competition has been intense and the Program Committee is fortunate to have dedicated members who are willing to serve on this important Committee. Cash prizes of up to $1,000 will be awarded in the categories of Graduate Student, Postdoctoral Fellow and Young Investigator. Awardees will also have the opportunity to present their work in the Oral Shotgun Presentation session. The prominence of the Poster Presentations at this meeting reflects the high quality of presentations and offers new and experienced investigators a high profile venue to present their work. The ICAR program, the poster topics presented during the Shotgun Session and many of the posters presented at the meeting will be placed on the Society’s webpage such that members of the Society can review the material both prior to and after the meeting.

The Program Committee and the Society are committed to bringing you the most rewarding scientific experience at the annual meeting. To this end, the Program Committee has worked diligently this year to make changes to the annual meeting in response to feedback we have solicited from our membership. We have endeavored to keep the best features of the meeting while adding scientific sessions and events which we believe will heighten the experience for all attendees.

As always, the Society will maintain its commitment to the newest ISAR members by again sponsoring a Career Forum. At this function, the attendees can meet with established scientists and other professionals active in antiviral research as a part of pharmaceutical, biotech, academia, and government sectors to discuss various career options. This highly interactive social event will provide participants with the opportunity to join one or more discussion groups to learn about potential career paths. There is no additional fee for the Career Forum, but since the available space is limited, attendees should indicate their interest when registering on-line for the ICAR meeting. Following the success of a special session on Women in Science (WIS) last year, it will be held again this year. It will include panel discussions to help provide advice for women scientists as their careers progress in this field. For more information, please the WIS article by Rhonda Cardin below.

This year all abstracts must be submitted online by February 17, 2017. This can be done through the ICAR website or by pasting the following link into your browser

V. Biographies of the Keynote Speakers

Ann Palmenberg

Ann Palmenberg received her BS degree (Chemistry) from St. Lawrence University in 1970, and her Ph.D. from the University of Wisconsin-Madison (Biochemistry, 1975), working in the laboratory of Paul Kaesberg. She received postdoctoral training with Charles Weissmann (Zurich) and Roland Rueckert (Madison). As the PI of a continuously funded (NIH) independent research program at the UW-Madison since 1978, Ann is now a Professor in the Department of Biochemistry and the Institute for Molecular Virology.

Her work on the molecular biology of positive-sense RNA viruses, particularly picornaviruses in the cardiovirus and enterovirus (rhinovirus) genera, has achieved international stature for its breadth and content. She has expertise in computational modeling of protein:protein interactions, bioinformatics (sequence analysis), recombinant protein expression, protein purification, protein detection, enzyme assays (activity and complex formation), and structural biology (crystallography, NMR, cryoEM). She has published extensively on these topics, both for research and technical audiences. She is an expert in RNA biochemistry, RNA dynamics, and RNA evolution. She teaches virology, bioinformatics and molecular modeling at the graduate and undergraduate levels.
Mark A. Pallansch

Mark Pallansch is Director, Division of Viral Diseases Division of Viral Diseases, Centers for Disease Control and Prevention in Atlanta, Georgia. He received his B.S. in Biochemistry (1976) from Virginia Tech and Ph.D. in Biochemistry (1982) from the University of Wisconsin-Madison. He then completed a postdoctoral fellowship (1984) in Virology (Persistent Measles Infection) at the Rockefeller University in New York.

Mark joined the CDC in 1984 as Chief of the Enterovirus Section in the Respiratory and Enteric Viruses Branch until becoming Chief, Polio and Picornavirus Laboratory Branch in 2007. Since assuming his current position in March of 2011, he leads an exceptional group of nearly 200 laboratory and epidemiology scientists, laboratory technicians, data managers and program analysts who are responsible for many aspects of domestic and global viral vaccine preventable diseases, including laboratory support for global efforts at polio eradication and measles elimination, domestic vaccination policy, surveillance and evaluation, reference laboratory testing for respiratory and enteric viral diseases, and research on new viral vaccine development and evaluation. He has also been actively involved in collaborations providing technical expertise and conceptual evaluation of issues for risk assessment and management, including multiple modeling approaches, as well as strategic planning within the polio eradication program.

Mark is the author or co-author of more than 200 publications and book chapters. He has been awarded the Pan American Society for Clinical Virology Ed Nowakowski Senior Memorial Clinical Virology Award (2008) and the Sigma Xi Walter R. Dowdle Award for Achievement in Public Health Science (2008). He has also received numerous awards at the CDC, including the Sheppard Award for Scientific Excellence (1988 and 2012), U.S. Public Health Service Special Recognition Award (1989), CDC Special Service Award (1991), James H. Nakano Citation (1996, 1999, 2001, 2002, 2003, 2009), Health and Human Services Group Distinguished Service Award (1999), and Stephen R. Preblud Award (2002, 2006). He currently serves as Chair of the American Society for Virology ATCC Advisory Committee, is a member of the Editorial Board of the Journal of Clinical Virology, and is a member of the Picornavirus Study Group of the International Committee on Taxonomy of Viruses.

Eric Hunter

Eric Hunter is Professor in the Department of Pathology and Laboratory Medicine at Emory University, Atlanta, GA. He is Co-Director of the Emory Center for AIDS Research and a Georgia Research Alliance Eminent Scholar. For the past several years his laboratory has investigated the molecular virological mechanisms underlying HIV transmission among heterosexual couples living in Rwanda (Projet San Francisco) and Zambia (ZEHRP) with an aim toward developing novel vaccine approaches that might prevent these transmission events. Recently this work has expanded to develop an understanding of the roles that the transmitted virus phenotype and host immune responses, in both donor and recipient partners, play in defining the rate and severity of HIV-1 disease progression.

His bibliography includes over 250 articles, reviews and book chapters. He has been the recipient of 4 NIH merit awards for his work on retrovirus molecular biology. After serving as Editor in Chief of the journal AIDS Research and Human Retroviruses for 10 years, he currently serves on the Editorial boards of several academic journals, and on the external advisory committees for several academic and commercial institutions, and NIH Institutes.
Pei-Yong Shi has pioneered flavivirus drug discovery in leading pharmaceutical companies and academia. He has taken both target-based and cell-based antiviral approaches. He has published over 210 peer-reviewed articles and serves as Editor (ACS Infectious Diseases, Journal of General Virology, and NPJ Vaccine) and Editorial Board member (Journal of Virology, Virology, and Antiviral Research). He is internationally recognized for his scholarly and administrative accomplishments at leading research institutions, public health sector, and pharmaceutical industry.

On behalf of the Program Committee, we look forward to welcoming you to Atlanta and the 30th ICAR in May 2017.

WELCOME TO ATLANTA

MESSAGE FROM THE LOCAL ORGANISERS
(David Chu and Dennis Liotta)

Welcome to the dynamic southern town of the US!

Atlanta is the capital of the State of Georgia, with an estimated 2015 population of 463,878. Atlanta is the cultural, education, research, transportation and economic center. The Atlanta metropolitan area is home to over 5.5 million people and the ninth largest metropolitan area in the United States. Atlanta is the primary transportation hub of the Southeastern United States with Hartsfield–Jackson Atlanta International Airport being the world’s busiest airport since 1998.

The 30th ICAR conference hotel is the Hilton Atlanta, located in the heart of downtown Atlanta. Atlanta serves as the unofficial capital of the Southern United States. Located only 11 miles away from Hartsfield-Jackson Airport, the Hilton offers a full array of amenities and spaces for guests to convene, as well as being in close proximity to a wide range of entertainment destinations.

You will be in the epicenter of the metropolis, within walking distance of the multitude of offerings Atlanta has to offer. Explore the rich cultural history of Atlanta by visiting the MLK Jr. National Historic Site, the Center for Civil and Human Rights, and the Carter Center. Partake in the diversified eateries located in Little Five Points, Midtown, and the famous Buckhead area, also home to boutique stores and the latest trends in fashion.

Take a tour at the CNN Center less than a mile away, and see how one of the most respected news sources in the world works day-to-day. The nearby Fox Theater presents shows, ranging from musicals to comedy attractions, for your enjoyment. Centennial Park, home to the 1996 Summer Olympics, houses the Georgia Aquarium, the largest of its kind in the Western Hemisphere. Also in the area is the Coca-Cola Museum, a fantastic destination for viewing exhibits and sampling hundreds of beverages. For those with an inclination toward sports, the Phillips Arena (host of Atlanta Hawks basketball) and the Georgia Dome (home to Atlanta Falcons football) are short walks away. You may also visit the famous Margaret Mitchell House & Museum located in midtown.

The weather is on the warmer side in late May, typically the high 80s/low 90s midday. Precipitation is mild in the early summer.

Looking forward to welcoming you in May.

30th ICAR (ATLANTA)

USEFUL INFORMATION
(Anthony Vere Hodge)

The 30th ICAR will run from 2 pm on Sunday, May 21 through 12:30 pm on Thursday, May 25, 2017.

Important pre-ICAR Dates

Abstract Submission Site Opens: Nov. 7, 2016
Registration Site Opens: Nov. 7
Abstract Submission Deadline: Feb. 17, 2017
Travel Merit Award and Travel Assistance Application Deadline: Feb. 17
Travel Merit Award and Travel Assistance Notifications Sent: Mar. 17
Abstract Acceptance Notifications Sent: Mar. 31
Early Bird Registration Deadline: Apr. 20
Registration Cancellation Deadline: Apr. 20
Hotel Reservations Deadline: Apr. 30
Conference Dates: May 21-25,
**Registration fees**

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<tr>
<td>Early Bird rate for students</td>
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<td>Regular rate for ISAR members</td>
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<td>Accompanying Persons (Guest):</td>
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**Hotel Information**

ISAR will host the 30th ICAR at the Hilton Atlanta. Hilton Atlanta 255 Courtland Street NE Atlanta 10950 United States TEL: +1-858-558-1500

Group Rate for ICAR attendees: $169 plus tax (single/double), $201.04 inclusive. The ICAR rate includes guest room wireless internet.

Reservations Deadline: April 30th.

Reservation link: https://aws.passkey.com/event/15466108/owner/322/home

Check-in: 4:00 pm. Check-out: 11:00 am

Airport – Hotel ground transportation:
The hotel is approximately 15 minutes from the Hartsfield Jackson International Airport. A taxi costs approximately $30 one way and a Super Shuttle costs approximately $16 one way.

Are you eligible for the U.S. Government Hotel Room Rate? We have a small room block for those who require U.S. Government rate. For more information contact the ISAR Office at info@isaricar.com.

**ISAR ELECTION RESULTS**

**(Bob Buckheit)**

I am delighted to report that Brian Gowen was confirmed as Treasurer and Jennifer Moffat was reelected to her board position and will serve a second term. The current Officers and Board of our Society are: Jose Este (President), Johan Neyts (President Elect), Robert Buckheit (Past President), Graciela Andrei (Secretary), Andrea Brancale, Jennifer Moffat, Mike Bray, Roger Ptak, Rhonda Cardin and Kathie Seley-Radtke. We are grateful to all who participated in the election and congratulate the successful candidates.

**Brian Gowen** received his Ph.D. degree in Biomedical Sciences from the University of South Carolina, School of Medicine in 2000, specializing in microbiology and immunology. Prior to that, he received a Bachelor’s degree in microbiology from Colorado State University. Dr. Gowen trained as a postdoctoral fellow at the Rocky Mountain Laboratories campus of the National Institute of Allergy and Infectious Diseases, National Institutes of Health, in Hamilton, Montana, from 2000-2004, where he studied host-bacterial pathogen interactions.

He joined the Department of Animal, Dairy, and Veterinary Sciences and the Institute for Antiviral Research at Utah State University (USU) in January of 2004. In 2012 he joined the faculty of the new USU School of Veterinary Medicine program and was appointed Adjunct Professor at Washington State University in the Department of Veterinary Microbiology and Pathology.

Brian specializes in preclinical development of antiviral therapies for the treatment of severe arenavirus and bunyavirus infections and modeling of viral hemorrhagic fever in rodents. He has 51 peer-reviewed publications, is the inventor on several patents, and serves on the editorial boards for the journals Antiviral Research, Antiviral Chemistry and Chemotherapy, and Scientific Reports. He has been an active member of the International Society for Antiviral Research (ISAR) since 2004 and continues to support the society as Treasurer (since 2014) and as a member of the Publications Committee (since 2009). In addition, Brian was the recipient of William Prusoff Young Investigator Award in 2011.
Jennifer Moffat trained at Stanford University School of Medicine where she received her doctorate in Microbiology and Immunology and did a postdoctoral fellowship in Pediatric Infectious Diseases. She is an internationally recognized expert on varicella-zoster virus, and her research has focused on developing mouse models to study the pathogenesis and treatment of this virus.

The current emphasis of her research group is evaluating antiviral compounds for VZV in a unique humanized SCID mouse model, which is supported by an NIH contract. She has received multiple NIH and New York State awards for her projects on the molecular basis of VZV disease, as well as contracts with pharmaceutical companies. In 2005, she received the SUNY Chancellor’s Award for Scholarship and Research. She has served on several NIH review panels and is on the editorial boards of Journal of Clinical Virology and Antiviral Research.

Jennifer has contributed extensively to the annual ICAR by chairing sessions, judging posters, and mentoring in the Career Development and Women in Science events. She has authored about 30 peer-reviewed articles, invited reviews, and book chapters. She was co-editor of a recent issue of Current Topics in Microbiology that covered advances in VZV research.

FINANCIAL SUMMARY OF THE 29TH ICAR IN LA JOLLA, CA, USA
(Brian Gowen)

The accounting for the 29th ICAR shows that the costs exceeded the revenue and sponsorship support by $29,191. Despite the deficit, ISAR remains in good financial standing with assets totaling over $630,000. The leadership of the society has submitted a grant proposal to the NIH requesting $40,000 annually over the next 5 years in an effort to obtain support for the upcoming 30th ICAR in Atlanta, as well as future meetings through 2021. The proposal was reviewed in December and a decision regarding funding should be available following NIH council review scheduled for the latter part of January. We are cautiously optimistic and hopeful that the NIH will provide some level of support for future meetings.

ISAR recognizes the tireless work of Roger Ptak in his ICAR sponsorship campaign efforts and the generosity of corporate and educational sponsors during these difficult economic times. We also extend our sincere gratitude to the ISAR membership and meeting attendees for their support of, and participation at, our annual meetings. I look forward to a great meeting in Atlanta in 2017.

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<td>La Jolla, CA, USA</td>
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**Revenue**

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<td>WIS</td>
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<td>Hotel Commission</td>
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**Expenses**

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<td>Awards*</td>
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**Net Balance**  
[– $29,191]

*Elion, Prusoff, Holý, Poster & Travel

WOMEN IN SCIENCE
(Rhonda Cardin, Committee Chair)

WIS Roundtable (Karen Buckheit)

The WIS Committee is excited to announce the 5th Annual Women in Science Roundtable. This session, the first event on the first day of ICAR, will be held on Sunday, May 21, from 12:00 – 1:45 PM. Registration will occur from noon-12:30 PM. It is open to both 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.

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 leading antiviral 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. Coffee and dessert will be provided.

2016 Chu Family Foundation Scholarships (Amy Patick)

Thanks to a generous donation from the Chu family, five young women with the potential to make significant contributions to the field of antiviral research will receive Chu Family Foundation (CFF) Scholarships in 2017. The application deadline was December 31, 2016. The recipients of the scholarships will be announced after March, 2017.

The scholarship funds may be used to attend a conference, visit a laboratory, take a course or acquire specialized training. The awards also include a 2-year membership in ISAR and a commemorative certificate. To be eligible, an applicant must be a woman working in an area of antiviral research and be an undergraduate or grad student, or have no more than five years of cumulative postdoctoral experience. The CFF and WIS Committees will present the awards at ICAR.

WIS Mentoring Program (Jennifer Moffat)

The Mentoring Program was launched at the 2014 ICAR in Raleigh, NC, when Roundtable participants were asked if they would like to be mentored or serve as mentors. Mentees and mentors were matched after filling out a questionnaire on their current interests, career goals, and what each of them wanted to achieve.

The mentors and mentees come from all around the world. Following their first face-to-face meeting, mentors and mentees have contact either by email, phone, or skype. Mentors provide career advice and scientific expertise in academia and the pharmaceutical industry. The response has been overwhelmingly positive. Significantly, the program has brought together women scientists from all aspects of antiviral research and at different stages of career development, and many new relationships have been forged.

If you’ve attended previous Roundtables, please consider joining the mentoring program, and if you’ve been a mentee, maybe it’s time for you to become a mentor! We especially need mentors from Europe, in the same time zone as some of the mentees. If you’re interested in joining this program, be sure to attend the WIS Roundtable. We will be sending a mentoring form to the female attendees just prior to the meeting. If you are interested in the Mentoring Program, just fill out the form and send it back! More information will be provided at the meeting.

ISAR WEBINAR SERIES 2016-2017
(Raj Kalkeri)

With the goal of creating ISAR membership benefits throughout the year and to actively engage ISAR members in scientific interactions, we have initiated the ISAR Webinar series. This series will be helpful in bringing together the antiviral research community from different disciplines and synergize antiviral research and Drug Discovery.

Our first webinar was delivered on Oct 31st, 2016 by Scott Weaver, Professor, Departments of Pathology and Microbiology & Immunology and Director, Institute for Human Infections and Immunity, Galveston National Laboratory, Texas.

The title of this webinar was “Zika Virus: Emergence, Biology, disease Models and prospects for control". Zika virus (ZIKV), a mosquito-borne flavivirus, typically causes asymptomatic infections but is also responsible for mild, dengue like illness (fever, rash, joint pain), neurological disease in children and adults (Guillain-Barre syndrome) and congenital microcephaly when pregnant women are infected. This ongoing outbreak has now spread to more than 50 countries around the world. Considering the rapid spread and the disease associated with this virus, WHO has declared this outbreak a global public health emergency. Despite the rapid spread of Zika virus (ZIKV) infection and associated neurological complications, prophylactic or therapeutic countermeasures are not currently available. Dr. Scott Weaver, spoke about Zika virus...
The second webinar was delivered on Dec 9th, 2016 by Rick Wobbe, Director, Educational Programs – InnovaTID Consulting Group, Cambridge, MA.

The title was “Designing Antiviral Screens and Assays: Common Pitfalls and How to Avoid Them”. Due to their capacity to rapidly handle, process and test large numbers of complex biological and chemical samples and produce vast amounts of data, high throughput screening (HTS) technologies have revolutionized the practice of early stage drug discovery and development. However, recent reports have shown that these increases in data output have coincided with a significant decrease in the productivity of novel drug discovery and development, measured as novel drugs produced per R&D dollar. Some reports have also identified common practices in HTS that undermine the pharmacologic relevance and utility of the resulting data to an extent that contributes to this productivity decline, even in the face of ongoing technological advances.

This webinar provided a general introduction to principles and practices common to a range of HTS platforms including cell-based screening, described factors that tend to yield counterproductive results and offered tools and techniques to avoid common pitfalls and improve data quality and utility.

Our third Webinar was on Jan 19th presented by Charlie Rice, an accomplished Virologist and the recent Lasker Award winner. The title of this webinar was “Hepatitis C virus: From Discovery to Cure”.

If you have a suggestion for a webinar speaker or would like to learn more about the series please contact me (rkalkeri@southernresearch.org).

ISAR webinar series are well attended and are attracting attention from diverse group of scientists from across the world. We have been receiving requests for copies of the webinar from many people. We hope to engage and educate ISAR members regarding various scientific developments in antiviral research and hope to enhance involvement of ISAR members in the society’s events.

UPDATE ON BRINCIDOFOVIR (CMX-001)
(Randall Lanier)

Chimerix is a biotechnology company committed to discovering, developing and commercializing medicines that improve outcomes for immunocompromised patients. Chimerix’s lead product candidate, brincidofovir, is in development as an oral and intravenous formulation for the prevention and treatment of DNA virus infections, including smallpox, adenoviruses, and the human herpesviruses. In early January, Chimerix announced preliminary data from an ongoing Phase 1 study to investigate the safety, tolerability and plasma/intracellular concentration of intravenous (IV) brincidofovir (BCV) following single escalating doses in healthy adult subjects.

In this ongoing study, IV administration of BCV demonstrated a favorable tolerability profile at both doses tested to date. No drug-related adverse events (AEs) or laboratory abnormalities were identified. Notably, gastrointestinal (GI) side effects were absent. Blood plasma concentrations of BCV which have previously demonstrated antiviral potency in cytomegalovirus (CMV) prevention and adenovirus treatment were achieved with IV doses that were one tenth those required with oral dosing.

As the new IV formulation of BCV progresses in clinical studies, BCV remains in development as an orally-administered lipid conjugate nucleotide for the treatment of adenovirus in hematopoietic cell transplant recipients and other immunocompromised patients, and as a medical countermeasure for the treatment of smallpox.
FROM DISCOVERY TO CURE – THE PIVOTAL ROLE OF ANTIVIRALS IN THE ELIMINATION OF HCV
(Simon Tucker)

The antivirals community is arguably at a watershed moment in its history with programs under way to cure patients and effectively eliminate an infectious disease from communities via the use of antiviral drugs. If successful, campaigns to eliminate hepatitis C (HCV) as a public health threat may provide further progress along the road envisaged by the Australian Nobel Laureate Sir MacFarlane Burnet in 1962: “One can think of the middle of the twentieth century as the end of one of the most important social revolutions in history, the virtual elimination of the infectious diseases as a significant factor in social life”.

Although the impact of all infectious diseases has by no means been eliminated there have been some compelling successes as a consequence of improvements in housing, nutrition, sanitation and medicine, including drugs and vaccination. The elimination of smallpox and rinderpest has been achieved and others such as polio have been virtually eliminated or closely controlled (for example measles and pertussis) such that they no longer pose a persistent, widespread public health or agricultural threat. These successes and the advances that have occurred since the 1960s suggest Sir MacFarlane Burnet’s vision remains relevant and achievable, albeit incomplete and challenging. With persistence and programs such as the recently launched Australian initiative described below the 21st century may, at least for HCV, prove him correct once again.

In 1991, roughly two years after the discovery of HCV by Michael Houghton and colleagues at Chiron Corporation and the US CDC, the first treatment in the form of interferon alpha (Schering’s Intron A) was approved by the US FDA. Patients received injections three times a week, and many suffered from the now well-known side effects, including neutropenia, thrombocytopenia, depression and anxiety, suicidal thoughts/attempt, anemia, etc. In addition, response rates from interferon alone regimens were low (in the range of 6-16%). In the following decade these rose to approximately 40-50% with the advent of ribavirin and pegylated interferon based regimens, but the tolerability issues remained and in many instances proved to be too onerous for patients. According to an Australian community member: “It is the idea of having to undergo side effects similar to chemotherapy for six months involving putting aside all your commitments, responsibilities (family, work, and mortgage payments) and putting your life on hold while you suffer physically and mentally for six months. No assistance provided at home if you are bed ridden, and the cure rates for interferon based treatments are not encouraging”.

Work on the next generation of direct acting antivirals (DAAs) was well underway throughout this period yielding the first approved DAAs, the NS3 protease inhibitors telaprevir and boceprevir, in 2011. Response rates rose to around 70% but these first generation DAAs still required combination with interferon and ribavirin for 24 to 48 weeks, were less effective for some genotypes and had their own side effects including skin rash and anemia. Nonetheless they represented an important breakthrough in HCV antivirals and provided many patients and their healthcare providers with a more acceptable treatment option.

These options improved dramatically from 2013 with the approval of the nucleotide antiviral sofosbuvir which was the first drug with demonstrated safety and efficacy for treatment of HCV infection without the need for co-administration of interferon and ushered in an era of all-oral DAA combination regimens with pan-genotypic activity, 90%-plus response rates and much improved side-effect profile. Sofosbuvir (marketed as Sovaldi) was designated a breakthrough therapy by the US FDA and “represents a significant shift in the treatment paradigm for some patients with chronic hepatitis C” (Edward Cox, Director of the Office of Antimicrobial Products, FDA Center for Drug Evaluation and Research).

But effective, well tolerated antiviral drugs are just the beginning; the next challenge on the road to elimination of HCV from communities is their effective deployment within the context of an elimination strategy that targets and actively supports people living with HCV, many of whom are marginalised and may experience challenges accessing appropriate health care. It has been argued that HCV elimination will require a holistic response involving politicians, pharmaceutical companies, payers, health care providers, patients and their caregivers/social networks and the community.

The World Health Organisation (WHO) has put forward a strategic framework for hepatitis prevention that includes goals for the elimination of hepatitis C as a public health threat by 2030. Several countries such as Georgia, Iceland and Australia have embraced the elimination challenge and have ambitious programs underway. The Australian government announced in December 2015 that publicly funded treatment will be available for everyone with hepatitis C in Australia. Interestingly, this involves a unique volume-based price agreement with pharmaceutical companies to initially treat up to 62,000 people at an agreed total fixed cost of AUS$1 billion over five years. Because the total cost is fixed this deal creates an incentive to diagnose and treat as many people as possible. Notably, this is being combined with programs to promote widespread
diagnosis (Australia’s diagnosis rate is currently estimated to be 75%) and uptake, including encouraging prescription of DAAs by community General Practitioners in addition to specialists, specialist nurse led models of patient care and risk management programs for people who inject drugs (PWID). This initiative, which actively encourages unrestricted access to antiviral drugs for all communities, including prisoners and PWID, is symptomatic of an important change from the perspective from cost to evidence-based cost effectiveness and the importance of advocacy.

According to Helen Tyrrell of Hepatitis Australia, “the narrative was all about price. We aimed to change the discussion to talk about the value of the medicines and the opportunity they presented. We showed that a high proportion of people were in the age group where the rate of progression of liver disease increased. We wanted them to think about elimination, about paying for a cure not tablets, and to think about volume.” Early signs are encouraging and suggest that uptake has been swift: the Kirby Institute (University of New South Wales, Australia) has estimated that in the first five months, 22,470 Australians commenced treatment, compared to only 2,000-3,000 people treated annually prior to the initiative.

As of 1 Jan 2017 the following drugs are included in the program: Daklinza® (daclatasvir), Harvoni® (sofosbuvir + ledipasvir), Ibavry® (ribavirin), Sovaldi® (sofosbuvir), Viekira Pak® (paritaprevir + ritonavir + ombitasvir + dasabuvir) , Viekira Pak RBV® (paritaprevir + ritonavir + ombitasvir + dasabuvir + ribavirin) and Zepatier® (grazoprevir + elbasvir).

In conclusion, antivirals are currently playing a pivotal role in programs aimed at eliminating HCV and in the words of Professor Margaret Hellard of the Burnet Institute, Melbourne, Victoria (named in honour of Sir MacFarlane Burnet) “We have the privilege and opportunity at this key moment in time to stop hepatitis C deaths, to stop hepatitis C transmission, to eliminate hepatitis C as a public health problem…”.

THE AUSTRALIAN HCV ELIMINATION INITIATIVE
(Margaret Hellard)

Hepatitis C is a blood-borne, chronic infectious disease that affects more than 220,000 Australians and causes an estimated 770 deaths each year due to liver failure and hepatocellular carcinoma. In Australia the group most affected by hepatitis C are people who inject drugs (PWID), with the vast majority of new HCV infections occurring among this group. However until recently fewer than 2% of PWID in Australia received hepatitis C treatment annually, due to the side-effects of treatment regimens and the provision of treatment primarily through tertiary hospital outpatient clinics that are not well suited to manage the needs of this population.

Recently more effective treatment has become available to treat hepatitis C; known as direct acting anti-virals (DAAs) unlike their predecessors DAA have minimal side effects, require a shorter timeframe of treatment (eight to 12 weeks) and have cure rates of over 90%.

In 2015 the Australian Federal Government has announced it is providing over AUD$1 billion dollars over five years through the Pharmaceutical Benefits Scheme to treat hepatitis C with the drugs becoming available from the 1st March 2016. Importantly DAA treatment was made broadly available, with people able to access treatment regardless of their level of hepatic fibrosis, or of how they acquired infection allowing PWID to access therapy. This means that Australia is well placed to stop people dying from the complications of hepatitis C and to stop the ongoing transmission of the hepatitis C virus through a treatment as prevention approach.

Based on the number of prescriptions written in the first six months of the scheme it is projected that around 30,000 Australians will be cured of their hepatitis C in the first year of DAAs becoming available through the Pharmaceutical Benefits Scheme. Once cured, people have a much lower risk of liver cancer and liver failure, and can no longer transmit infection. This open access policy, with broad uptake, is vital to interrupt transmission of hepatitis C, and eventually to eliminate hepatitis C as a public health issue.
UPCOMING MEETINGS OF INTEREST

35th Annual Infectious Diseases Conference, Sacramento, CA, USA. 3rd Feb-4th Feb 2017

15th European Meeting on HIV & Hepatitis: Treatment Strategies & Antiviral Drug Resistance, Rome, Italy. 7th Jun-9th Jun 2017

18th International Workshop on Clinical Pharmacology of Antiviral Therapy, Chicago, IL USA. 14th Jun-15th Jun 2017

American Society for Virology 2017 Annual Meeting, Madison, WI, USA. 24th June-28th Jun 2017


30th International Congress of Chemotherapy and Infection, Taipei International Convention Center, Taiwan. 30th Sept-3rd Oct 2017