Dear WIPO Re:Search Members and Friends,

Happy New Year!

It comes as no surprise to the WIPO Re:Search community that antimicrobial resistance (AMR) has risen to the forefront of the global public health agenda. Since the Consortium’s inception in 2011, BVGH has established numerous WIPO Re:Search collaborations aimed at developing novel drugs to combat drug resistant tuberculosis, outpace emerging antimalarial resistance, and more.

Although continued drug development is needed, there is mounting evidence that vaccines are necessary to prevent and circumvent AMR. For example, a recent article demonstrated that if children across 75 countries were vaccinated against pneumonia, the infections prevented would result in 11 million less days of antibiotic use annually. Given the relative costs of vaccines and antibiotics, vaccinations are also a cost-effective approach to AMR control.

Beyond drugs, BVGH is also catalyzing vaccine development. Notably, through WIPO Re:Search, researchers at Takeda Pharmaceutical Co. Ltd. and the National Institute of Allergy and Infectious Diseases (NIAID), National Institutes of Health (NIH) have formalized a partnership to assess an injection-free administration of a malaria vaccine candidate. Please continue reading this Snapshot to learn more.

I am pleased to welcome our two newest Members, the University of Texas Southwestern Medical Center and the University of South Carolina.

As we dive into the New Year, BVGH thanks you for yourcontinued support and participation in WIPO Re:Search. And as always, please forward this Snapshot to your colleagues and reach out to us with any partnering requests or ideas.

Sincerely,

Jennifer Dent
President, BVGH
**Accelerating Diagnostic Development for Tuberculosis**

The **Foundation for Innovative New Diagnostics** (FIND), McGill International TB Centre, Stop TB Partnership, Unitaid, and WHO have launched the **TB Diagnostics Critical Pathway**, an online tool for tuberculosis diagnostic developers. The Pathway describes the key activities and considerations developers should address at each stage of development – from concept to launch and scale-up. The tool, which also highlights relevant references and stakeholders, serves as a valuable resource for diagnostic developers and the broader tuberculosis community.

**WIPO Re:Search Statistics**

To view a current summary of the WIPO Re:Search agreements by disease and stage of development, click [here](#). Click [here](#) to view a complete list of WIPO Re:Search Members.

**Cornerstones of Collaboration**

**Micro-Needle Patch Application for a Malaria DNA Vaccine**

Takeda Pharmaceutical Company Limited and the **National Institute of Allergy and Infectious Diseases** (NIAID) have entered into a joint venture to examine the feasibility of using Takeda’s microneedle patch technology to administer a protein antigen-based, transmission-blocking malaria vaccine developed by NIAID’s Laboratory of Malaria Immunology and Vaccinology (LMIV). Under this agreement, Takeda and LMIV will first confirm the compatibility of the vaccine antigen and microneedle patch polymer. The NIAID scientists will subsequently evaluate the immunogenicity of the patch-administered vaccine *in vivo*. 
New Member Announcement

We are pleased to announce that the University of Texas Southwestern Medical Center (UT Southwestern) and the University of South Carolina (USC) have joined WIPO Re:Search.

University of Texas Southwestern Medical Center
Since its formation in 1943, the University of Texas Southwestern Medical Center (UT Southwestern) has grown from a small medical college into a multifaceted academic institution recognized for its excellence in educating physicians, biomedical scientists, and healthcare personnel. UT Southwestern is home to internationally recognized physicians and scientists including six Nobel Laureates, 22 members of the National Academy of Sciences, and 18 members of the National Academy of Medicine. Research at UT Southwestern includes basic biology of Schistosoma worms and drug discovery for leishmaniasis, malaria, and soil-transmitted helminthiases.

University of South Carolina
The University of South Carolina (USC) was founded in 1801, and today boasts more than 200 years of academic leadership. USC is renowned for its global contributions to research. In 2013, USC faculty were awarded over $220 million in sponsored research funding. Faculty from USC’s School of Public Health and School of Medicine are carrying out research in drug discovery for Chagas disease, HAT, and drug resistant bacterial infections, and are also working to elucidate the pathobiology and immunology of dengue.

Partnership Hub Central

Public Interest Intellectual Property Advisors: Supporting Antimalarial Drug Development by Addressing IP Inequities in LMICs
Professor Thanat Chookajorn, a malaria researcher from Mahidol University in Thailand, sought external assistance in processing legal documents and filing patent applications related to his antimalarial drug development partnership with a multinational pharmaceutical company. BVGH introduced Professor Chookajorn to Public Interest Intellectual Property Advisors (PIIPA), a global leader in providing highly customized, pro bono IP legal counsel to developing countries. PIIPA connected Professor Chookajorn with IP experts at a major United States-based law firm, who are supporting his IP development efforts and helping him to overcome barriers to his full and equal participation in international collaborations. For more information, please see PIIPA’s recent newsletter.

WIPO at the London School of Hygiene and Tropical Medicine
Charles Randolph (Head, Global Health, WIPO) and Tom Bombelles, (Head of NGO and Industry Relations, WIPO) visited the London School of Hygiene and Tropical Medicine (LSHTM) to discuss LSHTM’s interest in joining WIPO Re:Search. During their visit, Charles and Tom briefed 14 LSHTM faculty members and strategic research officers on WIPO Re:Search and WIPO’s broader mission.

Charles Randolph (left) and Tom Bombelles (center) meeting with (from left to right) Dr. Hannah Whiteman (Head of Strategic Research), Dr. Alexandra Anderson (Strategic Research Officer), and Dr. Florence Gohard (Strategic Research Officer) of LSHTM.
**Burroughs Wellcome Fund Collaborative Research Travel Grant**

The Burroughs Welcome Fund is providing travel funds to scientists at U.S. or Canadian degree-granting institutions. Grants must be used for domestic or international travel to a lab to learn new techniques, or begin or continue a collaboration that addresses a biomedical question. **All proposals must be cross-disciplinary in nature.**

- **Funding amount:** $15,000 USD
- **Funder:** Burroughs Wellcome Fund
- **Deadline:** February 1, 2018
- **Eligibility:** Open to applicants with a Ph.D. in mathematics, physics, chemistry, computer science, statistics, or engineering who are interested in investigating topics in the biological sciences. Biologists holding a doctorate degree and are interested in collaborating with physical scientists, mathematicians, engineers, chemists, statisticians, or computer scientists to answer biological questions are also eligible to apply. Grants will be made to U.S. or Canadian degree-granting institutions only.

For more information about BVGH FundFinder, please email Cathy Manner.

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**Highlighted Contribution**

**Human African Trypanosomiasis**

Due to persistent and consolidated control efforts, the number of newly-reported human African trypanosomiasis (HAT) cases has dropped 85% since 2000. With less than 3,000 cases reported in 2015, the WHO has targeted HAT for elimination by 2020. Despite recent successes, HAT continues to threaten millions of individuals across Africa.

Current control efforts rely on detection, treatment, and vector control. Unfortunately available drugs are difficult to use and are not universally effective against all *Trypanosoma brucei* subspecies and disease stages.

To support HAT elimination, the development of drugs with reduced complexity and demonstrated efficacy across stages and subspecies is needed. This Snapshot highlights selected inhibitors that have demonstrated repurposing potential against HAT:

- **Casein kinase inhibitors**
- **Phosphodiesterase V (PDEV) inhibitors**
- **Potassium channel blockers**
- **Proteasome inhibitors**

For more information or to discuss potential collaborations regarding these inhibitors, please contact Cathy Manner.
## Upcoming Global Health Events

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<tr>
<th>Dates</th>
<th>Event Name</th>
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<th>Web Link</th>
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<tr>
<td>Mar. 1 - 4</td>
<td>18th International Congress on Infectious Diseases</td>
<td>Buenos Aires, Argentina</td>
<td>[Website]</td>
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<tr>
<td>Mar. 11 - 16</td>
<td>Gordon Research Conference: Driving Antibacterial Discovery and Development to Address the Clinical Demands of the Next Decade</td>
<td>Ventura, California</td>
<td>[Website]</td>
</tr>
<tr>
<td>April 15 - 20</td>
<td>7th Multilateral Initiative on Malaria (MIM) Pan African Malaria Conference</td>
<td>Dakar, Senegal</td>
<td>[Website]</td>
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*Known as EMD in the US and Canada | **Known as Merck in the US and Canada

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Our mailing address is:
401 Terry Avenue N., Seattle, WA 98109
Dear WIPO Re:Search Members and Friends,

We are excited to announce the release of our 2017 WIPO Re:Search Partnership Hub Annual Report. Across the board, we exceeded our 2017 goals for WIPO Re:Search. We look forward to building on these successes and continuing to drive product development for the most pressing global health needs in 2018. If you would like hard copies of the Annual Report, please contact Erica Jones.

Innovation and access to health technologies are critical to achieving the Sustainable Development Goals (SDGs), notably SDG 3: healthy lives and well-being for all at all ages. Later this month, the World Intellectual Property Organization (WIPO), World Health Organization (WHO), and World Trade Organization (WTO) will host the Technical Symposium on Sustainable Development Goals: Innovative technologies to promote healthy lives and well-being. This Trilateral Cooperation promotes interplay between public health and IP policies, improving the synergistic implementation of policies.

At the 30th African Union Heads of State Summit, the African Leaders Malaria Alliance (ALMA) approved the addition of NTDs to the ALMA annual scorecard on disease progress. This commitment prioritizes NTDs alongside malaria and maternal and child health for the African continent. The NTD progress index, developed by the WHO and Uniting to Combat NTDs, tracks mass treatment coverage across sub-Saharan Africa for five NTDs: lymphatic filariasis, onchocerciasis, schistosomiasis, soil-transmitted helminthiases, and trachoma.

As mass treatment efforts increase, so does antimicrobial resistance (AMR). Through WIPO Re:Search, scientists are addressing AMR by developing new drug candidates with novel modes of action. In 2017 alone, BVGH established eight drug discovery collaborations addressing one or more of the ALMA priority NTDs. Continue reading to learn how a new collaboration between the Foundation for Innovative New Diagnostics (FIND) and the Institut Pasteur Korea seeks to address drug-resistant tuberculosis.

I am pleased to welcome our newest Member, the University of Zambia.

Sincerely,
Jennifer Dent
President, BVGH

Special Announcements

Newly Established Master’s Program in Global Health
The University of Bonn in Germany has announced a new M.Sc. program in global health, with a focus on risk management and hygiene policy. The University of Bonn study program is offered in association with the Institute of Environment and Human Security (EHS) at the United Nations University in Bonn. The course is offered to post-graduate students and will be taught in English. Applications are considered on a rolling basis. Click here for more information.
WIPO-WTO Colloquium for IP Teachers and Researchers in Africa

Building upon the success of the annual Geneva WIPO-WTO Colloquium, WIPO and the WTO are offering—in cooperation with the University of South Africa (UNISA)—a regional edition of the Colloquium for participants from Africa. The WIPO-WTO Colloquium for IP Teachers and Researchers in Africa will be held April 9-12 followed by the IP Scholars Africa Conference, which will be hosted by and held at UNISA on April 13, in Pretoria, South Africa. Registration closes Feb. 25. Click here for more information.

WIPO Re:Search Statistics

Click here for a list of WIPO Re:Search Members.
Click here for a list of WIPO Re:Search collaborations.

Cornerstones of Collaboration

In 2016, approximately 490,000 new cases of multidrug-resistant (MDR) tuberculosis emerged, a figure that underscores the need to develop novel therapies. Dr. Vincent Delorme, Group Leader of the Tuberculosis Research Lab at Institut Pasteur Korea is working to develop new drugs against tuberculosis. Dr. Delorme’s compounds showed promise against MDR tuberculosis, and he was interested in screening them against additional drug-resistant Mycobacterium tuberculosis (Mtb) strains to inform the selection of a preclinical candidate. BVGH connected Dr. Delorme with the Foundation for Innovative New Diagnostics (FIND), who agreed to share resistant Mtb strains to support Dr. Delorme’s drug development efforts.
FIND houses a large biorepository with sputum, blood, and urine samples and matching strains from around the globe. Click here for more information, or email Cathy Manner to discuss your collaboration interest.

New Member Announcement

University of Zambia
The University of Zambia (UNZA) was established in 1965, guided by its motto for “service and excellence.” Today, UNZA is the oldest and largest public university in Zambia, enrolling over 30,000 students. Researchers at the University of Zambia are working to develop new drugs for human African trypanosomiasis (HAT) and schistosomiasis, screening and validating traditional medicines for their antimicrobial and antiviral properties, and exploring the potential etiologies of brain swelling in cerebral malaria. In addition to their drug discovery work, UNZA investigators are developing new diagnostics for dual-schistosome infections, using rats to detect \textit{Mtb} infections, and improving diagnostic methods for malaria.

Partnership Hub Central

WIPO Visits BVGH for Productive Meetings in Seattle
Edward Kwakwa (Senior Director, Department for Traditional Knowledge and Global Challenges, WIPO) and Charles Randolph (Head, Global Health, WIPO) visited BVGH’s offices in Seattle, Washington. During the visit, WIPO and BVGH conducted internal discussions, mapping out actions towards fulfilling WIPO Re:Search goals and deliverables for 2018 and beyond. In addition, BVGH and WIPO held meetings with key global health stakeholders including the Bill & Melinda Gates Foundation and PATH.

From left to right: Jennifer, Erica, Cathy, Edward, Callie, Joseph, Katy, Charles, Amy.

Darin Zehrung (Portfolio Leader, Vaccine and Pharmaceutical Delivery Technologies and Senior Technical Officer, PATH) gives a tour of PATH, featuring novel technologies in development.

BVGH FundFinder Featured Awards
Medicines for Malaria Venture: 16th Call for Proposals

Medicines for Malaria Venture (MMV) recently opened up its 16th call for proposals. MMV welcomes proposals in the following areas:

1. Compounds addressing the key priorities of the malaria eradication agenda
2. Compounds with activity against asexual liver and/or blood stages
3. Novel approaches for screening

Funder: Medicines for Malaria Venture
Deadline: Letter of intent (LOI) due March 23, 2018

Medicines for Malaria Venture: 1st Call for African Proposals

MMV has opened its 1st call for proposals from African scientists focused in the following priority areas:

1. Compounds with confirmed activity on any antimalarial lifecycle stage
2. Assay development and screening

Funding amount: USD $20,000
Funder: Medicines for Malaria Venture
Deadline: LOI due March 23, 2018
Eligibility: Scientists in malaria-endemic regions of Africa.

For more information about BVGH FundFinder, please email Cathy Manner.

Highlighted Contribution

Leprosy

The Global Partnership for Zero Leprosy was launched to accelerate progress towards a world without leprosy. Contributors to the Global Partnership include the Novartis Foundation, the International Federation of Anti-Leprosy Associations (ILEP), and the International Association for Integration, Dignity and Economic Advancement (IDEA), with support from the WHO. In its initial phase, the Global Partnership for Zero Leprosy will coordinate action in three key areas:

1. Accelerate research on new diagnostic and therapeutic tools, interventions, and strategies to interrupt leprosy transmission
2. Mobilize technical expertise to strengthen existing national programs
3. Increase advocacy and fundraising

In recognition of the Global Partnership for Zero Leprosy and World Leprosy Day (Jan. 28), BVGH highlights the following compounds with repurposing potential against Mycobacterium leprae:

- Dihydrofolate reductase (DHFR) inhibitors
- HMG-CoA reductase inhibitors
- Phosphoinositide 3-kinase (PI3K) inhibitors
- Squalene synthase inhibitors
- Tyrosine kinase inhibitors

For more information or to discuss potential collaborations involving these inhibitors, please contact Cathy Manner.

Upcoming Global Health Events
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<th>Dates</th>
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<tr>
<td>Mar. 27</td>
<td><strong>International Society for Neglected Tropical Diseases: ISNTD Festival</strong></td>
<td>London, England</td>
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<tr>
<td>April 15 - 19</td>
<td><strong>Keystone Symposium: Tuberculosis: Translating Scientific Findings for Clinical and Public Health Impact</strong></td>
<td>Whistler, Canada</td>
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<tr>
<td>May 23 - 25</td>
<td><strong>BioMalPar XIV: Biology and Pathology of the Malaria Parasite</strong></td>
<td>Heidelberg, Germany</td>
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<tr>
<td>Jun. 10 - 15</td>
<td><strong>Gordon Research Conference: Eukaryotic Parasites: From Discovery Research to Clinical Interventions</strong></td>
<td>Newport, Rhode Island</td>
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*Known as EMD in the US and Canada | **Known as Merck in the US and Canada*
Dear WIPO Re:Search Members and Friends,

“Why do you work with corporations?” Bill and Melinda Gates were asked in their Annual Letter 2018, the 10 Toughest Questions We Get. “We work with companies like GSK and Johnson & Johnson because they can do things no one else can,” answered Melinda, “when the goal is to build upon basic science, translate it into products that save lives, get those products tested and approved, and then manufacture those products, biotechnology and pharmaceutical companies have the vast majority of the necessary expertise. Every partner we work with is required to make products developed with foundation funding widely available at an affordable price.”

Stewart Cole, President of the Institut Pasteur, recently published an editorial, Tuberculosis drug discovery needs public–private consortia. Cole petitions that academic talent and creative skills be combined with “the pragmatism and experience of professional drug developers to harness medicinal chemistry to deliver drug-like molecules with the best pharmacological properties.”

Since its inception in 2011, WIPO Re:Search has been grounded on parallel principles. WIPO Re:Search recognizes and applies companies’ critical expertise to neglected tropical disease (NTD) product development, and increasing global access to the resulting products. I encourage you to read on to learn how Merck & Co., Inc. is playing such a critical role in sharing expertise and know-how to accelerate drug development for NTDs.

Sincerely,
Jennifer Dent
President, BVGH

Upcoming Event

Mark your calendars! The 1st Malaria World Congress will be held July 1-5, 2018 in Melbourne, Australia. Among others, one objective of the Congress is to facilitate collaboration between practitioners of scientific innovation, health systems delivery, and community, government, and non-government organizations.

Early bird registration closes March 29, 2018.
Special Announcement

**CID Research Awarded $17.2 Million NIH/NIAID Tuberculosis Grant**

*Omics for TB: Response to Infection and Treatment*

Congratulations to the Center for Infectious Disease Research (CID Research), which has been awarded a $17.2 million dollar grant from the National Institute of Allergy and Infectious Diseases (NIAID) to tackle tuberculosis using a systems-level approach. The grant involves CID Research scientists, in collaboration with the Institute for Systems Biology (ISB), Stanford University, and Weill Cornell Medical College. The research will focus on infection and disease progression, and treatment outcome variability. The research will ultimately support the development of new drugs, diagnostics, and vaccines against tuberculosis.

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**WIPO Re:Search Statistics**

- **36** Active Agreements
- **133** Members
- **41** Countries
- **125** Agreements Established
- **10** Advancing Agreements

Click [here](#) for a list of WIPO Re:Search Members. Click [here](#) for a list of WIPO Re:Search collaborations.

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**Cornerstones of Collaboration**

*MSD* Be well  
*Center for Infectious Disease Research*  
*Seattle Structural Genomics Center for Infectious Disease*  
*University of California, San Diego*

**Advancing Partnerships through Knowledge Transfer**

Although pharmaceutical compounds are an important intellectual property asset, knowledge and expertise sharing can be an equally valuable accelerator of product development. To support an ongoing collaboration, *MSD* scientists Drs. Stephen Soisson, Corey Strickland, Sujata Sharma, and David Olsen engaged in discussions with investigators from the Center for Infectious Disease Research (CIDR), the Seattle Structural Genomics Center for Infectious Disease (SSGCID), and the University of California, San Diego (UCSD). MSD scientists provided valuable advice and expertise in support of CIDR, SSGCID, and UCSD’s structural elucidation efforts for *Schistosoma* HMG-CoA reductase, a drug target for schistosomiasis.

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Dr. Stephen Soisson, Structural Chemistry Site Lead at MSD, spearheaded the discussions with SSGCID, CIDR, and UCSD.
IP in Focus

WHO-WIPO-WTO Technical Symposium on Sustainable Development Goals: Innovative technologies to promote healthy lives and well-being

“Better health allows children to learn and adults to earn; it helps people escape from poverty; and it lays the foundation for long-term economic development,” said WHO Director General Tedros in his opening remarks of the Technical Symposium on Sustainable Development Goals: Innovative technologies to promote healthy lives and well-being. WIPO, the World Health Organization (WHO), and World Trade Organization (WTO) organized the Symposium to promote interplay between public health and IP policies in implementing the Sustainable Development Goals (SDGs), notably SDG 3: healthy lives and well-being for all at all ages.

BVGH FundFinder Featured Awards

The S10 Research Instrumentation Awards
The National Institutes of Health (NIH) Office of Research Infrastructure Program (ORIP) S10 Instrumentation Grant Programs support purchase of commercially available instruments to enhance research of NIH–funded investigators. In the last 5 years, ORIP has awarded funding to purchase over 500 instruments. S10 awards are made to domestic higher education and non-profit institutions. Applications must include three or more currently NIH–funded Principal Investigators who demonstrate substantial need for the instrument. Instruments supported by S10 funding include, but are not limited to, X-ray diffraction systems, nuclear magnetic resonance (NMR) and mass spectrometers, DNA and protein sequencers, biosensors, electron and confocal microscopes, cell-sorters, and biomedical imagers.

Funding amount: $50,000 to $2,000,000  
Funder: National Institutes of Health (NIH)  
Deadline: May 31, 2018  
Eligibility: Each application must include three or more NIH–funded investigators at U.S. institutions. Only higher education and non-profit institutes are eligible to apply.

E-ASIA Joint Research Program: Health Call for Proposals in the Areas of Infectious Diseases and Cancer
The e-ASIA Joint Research Program aims to develop a collaborative research community in science and technology, to promote innovation in the East Asian region, and to contribute to the region’s economic development. The following member organizations of the e-ASIA Joint Research Program are implementing joint calls for proposals of multilateral cooperative research activities: Cambodia (Ministry of Health), Indonesia (Ministry of Research, Technology and Higher Education), Japan (Japan Agency for Medical Research and Development), Myanmar (Ministry of Education), New Zealand (Health Research Council), Philippines (Department of Science and Technology), Russia (Russian Foundation for Basic Research), Thailand (National Science and Technology Development Agency), and USA (National Institute of Allergy and Infectious Disease, National Cancer Institute). The program is accepting proposals in infectious diseases and cancer. The aim of the joint call is to contribute to the development of regional science and to overcome public health and medical problems in East Asia through multilateral collaboration.

For more information, see the Guidelines (PDF) and Application Forms (Word).

Funding Amount and Funder: Dependent on applicant’s country  
Deadline: April 25, 2018  
Eligibility: Proposals must involve multilateral collaboration by researchers from three or more participating countries.

For more information about BVGH FundFinder, please email Cathy Manner.
Member Spotlight

Natural Product Activity & Species Source Database
Investigators at the National University of Singapore have developed a database connecting natural products to biological targets via experimental-derived quantitative activity data.

The database includes over 25,000 source organisms, 35,000 natural products, nearly 6,000 biological targets, and 447,000 activities records. The database allows users to browse targets by protein family, and review biological activities of natural products against specific targets. Users can download data relating to targets including IC50 and compound-species pairs.

Highlighted Contribution

Tuberculosis
Many pathogenic organisms are showing alarming increase in antimicrobial resistance (AMR), threatening advances in modern medicine. In addition to multidrug resistant tuberculosis (MDR-TB), extreme drug-resistant (XDR-TB) infections are on the rise. The success rate of MDR-TB treatment is only around 50%, and drops to around 25% for XDR-TB. There is urgent need for the development of new tuberculosis drugs with novel targets and mechanisms of action.

Host-directed therapies offer a novel approach to treating tuberculosis, as host targets can amplify anti-TB immune responses and facilitate host elimination of the bacteria. Even more advantageous, host-directed therapies minimize the risk of drug resistance. In support of World Tuberculosis Day (March 24), this Snapshot highlights compounds that have repurposing potential as host-directed therapies against tuberculosis:

- Epidermal growth factor receptor (EGFR) inhibitors
- Muscarinic receptor antagonists
- Protein kinase R (PKR) inhibitors
- Selective serotonin reuptake inhibitors (SSRIs)
- Tyrosine kinase inhibitors

For more information or to discuss potential collaborations involving these inhibitors, please contact Cathy Manner.

Upcoming Global Health Events

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<td>April 21 - 24</td>
<td>28th European Congress of Clinical Microbiology and Infectious Diseases</td>
<td>Madrid, Spain</td>
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<tr>
<td>May 14 - 15</td>
<td>20th International Conference on Tuberculosis</td>
<td>London, England</td>
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<tr>
<td>June 10 - 15</td>
<td>Gordon Research Conference: Eukaryotic Parasites: From Discovery Research to Clinical Interventions</td>
<td>Newport, Rhode Island</td>
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<tr>
<td>July 1 - 5</td>
<td>1st Malaria World Congress</td>
<td>Melbourne, Australia</td>
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Dear WIPO Re:Search Members and Friends,

On April 26th WIPO will celebrate its annual World Intellectual Property Day. This year’s campaign, “powering change: women in innovation and creativity,” draws attention to the women who are driving change and shaping our future. WIPO Re:Search supports and actively engages women in science. In 2017 BVGH and WIPO (through Funds in Trust [FIT2] from the government of Australia) supported the training of two female scientists from Papua New Guinea and Bangladesh through capacity building sabbaticals in Australia. More than half of the WIPO Re:Search collaborations established last year involved female lead investigators.

“The superbugs can be stopped – if we put good ideas into action,” caveated Dr. Jayasree Iyer (Executive Director, Access to Medicine Foundation) in the Foundation’s Antimicrobial Resistance Benchmark 2018. WIPO Re:Search Member companies are making major contributions to the fight against antimicrobial resistance (AMR). Of the top eight companies leading efforts towards appropriate access and stewardship of antibiotics, five are WIPO Re:Search Members: GSK, Johnson & Johnson, MSD*, Novartis, and Pfizer.

In 2016 resistance to artemisinin-based combination therapies was confirmed in Plasmodium parasites circulating in Southeast Asia. It was recently reported that a multidrug-resistant P. falciparum strain that originated in Cambodia, PfPailin, has spread to Thailand, Laos, and Vietnam. This alarming expansion poses a public health crisis and endangers advances in malaria control. In recognition of World Malaria Day (April 25th), this Snapshot underscores the development of novel antimalarials through partnerships.

Sincerely,
Jennifer Dent
President, BVGH

*Known as Merck & Co., Inc. in the US and Canada

Phages for Global Health: 2nd East Africa Phage Workshop
Motivated by the deficit of phage experts in Africa and Asia – regions where 90% of deaths caused by antibiotic resistance occur – Phages for Global Health is on a mission to bring phage expertise to low- and middle-income countries (LMICs).

Phages for Global Health offers a variety of laboratory training and product development workshops to support capacity building and international collaboration. Through these hands-on laboratory training courses, LMIC scientists are taught how to isolate and characterize phages in their own regions. Phages for Global Health will hold its 2nd East Africa Phage Workshop at Pwani University in Kenya, from June 28 to July 7, 2018. To sign up for the workshop, click here.
New Online Reference Resource for Labs Conducting Tuberculosis Trials

The Mycobacteriology Laboratory Sourcebook for Harmonization and Support of Tuberculosis (TB) Clinical Trials was created to support high-quality results and comparability of data across labs participating in tuberculosis clinical trials sponsored by National Institute of Allergy and Infectious Diseases (NIAID) funded clinical trial networks. The 100+ page sourcebook describes essential technical components of lab procedures aimed at ensuring safety and comparability and quality of results.

WIPO Re:Search Statistics

36 Active Agreements
133 Members
9 Advancing Agreements
126 Agreements Established
40 Countries

Click here for a list of WIPO Re:Search Members.
Click here for a list of WIPO Re:Search collaborations.

Cornerstones of Collaboration

Cerebral malaria (CM) is one of the most severe complications of malaria, and is often fatal. Prof. Alister Craig of the Liverpool School of Tropical Medicine (LSTM) is working to elucidate the mechanisms of CM, and found that inhibition of the PAR1 protein might reduce brain swelling and fatality. BVGH connected Prof. Craig with Eisai Co., Ltd., who shared a set of PAR1 inhibitors. Following promising initial results with the PAR1 inhibitors in an in vitro model of brain barrier function, Prof. Craig was awarded a Medical Research Council Confidence in Concept award. Eisai shared additional PAR1 inhibitors with Prof. Craig to support his continued research of PAR1 inhibitors using more complex models.

IP in Focus

Oussama Ben Fadhel, a Technology Transfer Professional from the Institut Pasteur de Tunis (IP Tunis), visited Emory University last month for a week-long technology transfer exchange and consulting program. During his visit, Oussama learned and worked alongside Emory University’s licensing, patent, and industry contracting teams. Oussama’s visit was supported by the Commercial Law Development Program (CLDP) of the U.S. Department of Commerce. The CLDP fosters global innovation and entrepreneurship by providing technical assistance on technology transfer to developing countries.
BVGH FundFinder Featured Awards

**The African Postdoctoral Training Initiative**
The African Academy of Sciences (AAS), the National Institutes of Health (NIH), and the Bill & Melinda Gates Foundation (BMGF) have established a postdoctoral training fellowship program, the African Postdoctoral Training Initiative (APTI). Recipients of the APTI fellowship will train at the NIH, and will focus on a global health research area of priority to their home institutions and countries, and the AAS, BMGF, and NIH. The research priority areas are infectious diseases; nutrition; reproductive, maternal, and child health; and developing skills for clinical and translational research. Click here for more information.

For more information about BVGH FundFinder, please email Cathy Manner.

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**Member Spotlight**

**Global Health Compound Design Webinars**
Throughout 2018 Medicines for Malaria Venture (MMV) will be hosting webinars on compound design. These webinars aim to share experts’ experiences in designing compounds for global health projects (malaria, tuberculosis, and neglected tropical diseases), and will cover wide-ranging topics including open-access design tools, quality criteria such as target candidate profiles, and case histories.

The next webinar will be held on Wednesday, April 18, 2018, 16:00 CET. Dr. Mark Gardner (Managing Director, Computation and Medicinal Chemist, Salvensis) will introduce PK Solver – a free tool to analyze pharmacokinetic (PK) data and derive PK parameters for modelling. Click here to register for the webinar.

If you are interested in giving a presentation, please contact Mark Gardner.

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**Highlighted Contribution**

**Malaria**
According to the World Health Organization (WHO), between 2010 and 2015, malaria incidence fell by 21% globally. Despite this impressive decline, malaria is still endemic in 91 countries and accounts for an estimated 200+ million cases annually, resulting in approximately 430,000 deaths – primarily in children under the age of five. This mosquito-borne illness claims the life of one child every two minutes. In recognition of World Malaria Day (April 25th), this Snapshot highlights compounds that have demonstrated repurposing potential against *Plasmodium* parasites:

- Diglyceride acyltransferase (DGAT) 1 inhibitors
- Enhancer of zeste homolog (EZH) 2 (histone-lysine N-methyltransferase) inhibitors
- HIV protease inhibitors
- HMG-CoA Reductase inhibitors
- Lysine-specific demethylase (LSD) 1 inhibitors

For more information or to discuss potential collaborations involving these inhibitors, please contact Cathy Manner.
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<td>July 22 - 27</td>
<td><em>Gordon Research Conference: Looking for Common Themes and Solutions in Drug Resistance for Cancer, Infectious Disease and Agriculture</em></td>
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<td>August 19 - 24</td>
<td><em>14th International Congress of Parasitology (ICOPA 2018)</em></td>
<td>Daegu, Korea</td>
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* Known as EMD in the US and Canada | ** Known as Merck in the US and Canada
Dear WIPO Re:Search Members and Friends,

“Health is a human right. No one should get sick or die just because they are poor, or because they cannot access the services they need,” said World Health Organization (WHO) Director-General Tedros in his World Health Day message. Despite this, in the recent SDG Index and Dashboards Report 2017, Bertelsmann Stiftung and the Sustainable Development Solutions Network reported a mere 11 out of 157 countries have achieved Sustainable Development Goal (SDG) #3: good health and wellbeing.

In advance of the World Health Assembly, the WHO’s Draft Thirteenth General Programme of Work 2019-2023 underscores its strategic priorities towards its primary objective of ensuring healthy lives and promoting well-being for all at all ages. This objective is supported by three major goals to ensuring an additional 1 billion people are: (1) benefitting from universal health coverage, (2) protected from health emergencies, and (3) enjoying better health and well-being.

At the Malaria Summit London 2018 last month, the Malaria Consortium and Professor Alister Craig from the Liverpool School of Tropical Medicine answered the question, “How close are we to defeating malaria?” Listen to their response here.

I am excited to announce that the Wellcome Trust has recognized the Walter and Eliza Hall Institute of Medical Research (WEHI) and MSD* with a Seeding Drug Discovery Award of nearly $3.6 million USD to support their malaria drug discovery collaboration. Congratulations!

Sincerely,
Jennifer Dent
President, BVGH

*known as Merck & Co., Inc. in the US and Canada
Special Announcement

Wellcome Trust Recognizes Walter and Eliza Hall Institute of Medical Research and MSD Antimalarial Collaboration Team with Seeding Drug Discovery Award

WEHI investigators from left to right: Drs. Alan Cowman, Justin Boddey, and Brad Sleebs.

With over 216 million cases in 2016, leading to an estimated 445,000 deaths worldwide, malaria is one of the world’s most devastating diseases. Novel therapies are urgently required to populate the antimalarial clinical portfolio, as current therapeutics are becoming less effective due to emerging resistance.

Malaria is an infectious disease caused by parasitic protozoa of the genus *Plasmodium*, and transmitted by *Anopheles* mosquitoes. A collaboration – established through WIPO Re:Search – between MSD* and the Walter and Eliza Hall Institute of Medical Research has demonstrated that parasite aspartyl protease enzymes are attractive drug targets, since they perform essential functions at different stages of the parasite life cycle.

Through screening aspartyl protease inhibitor libraries, the collaboration has identified novel drug-like hit compounds that are active against the malaria parasite. With the encouragement and support of BVGH, the organization responsible for catalyzing research collaborations through WIPO Re:Search, the Walter and Eliza Hall Institute/MSD team applied and successfully competed for Seeding Drug Discovery (SDD) Early Stage Award funding from the Wellcome Trust (WT) to accelerate its collaborative research program. For the duration of the two year SDD Award, the joint team will use the funding from the WT toward increasing potency and selectivity against the parasite, with the aim of progressing to a lead optimization stage discovery program.

Click [here](#) for more information.

*known as Merck & Co., Inc. in the US and Canada
Onchocerciasis affects 18 million people in tropical countries. Current treatments kill the first-stage larvae (microfilariae), but are ineffective against the adult larvae (macrofilariae). Ivermectin, the standard medicine for onchocerciasis, causes severe side effects in patients co-infected with *Loa loa* worms. As the second leading cause of infectious blindness, there is a vital need for effective and selective treatments against onchocerciasis. The teams of Robin Gasser, Professor of Parasitology, *University of Melbourne* and Jonathan Baell, Professor of Medicinal Chemistry, *Monash University* have identified compounds that inhibit the barber’s pole worm, and were interested in screening them against other infectious worms. BVGH connected Robin Gasser with Fidelis Cho-Ngwa, Professor of Biochemistry and Biotechnology at the *University of Buea*, who is developing inhibitors that are selective for *O. volvulus*. Fidelis will screen Robin and Jonathan’s compounds against *O. volvulus* to identify potential drug candidates.

New Member Announcement

Founded in 1992, *LifeArc* (formally MRC Technology) evolved from the United Kingdom’s Medical Research Council (MRC). LifeArc is dedicated to improving product development by pioneering new ways to progress great science into greater patient impact. With the fitting role as the arc between academic researchers and market distribution, LifeArc has united a team of researchers with a diversified set of expertise in assay development, compound screening, medicinal chemistry, ADME, and pharmacology for translational progress of product development. From funding opportunities for early stage research to providing intellectual property management and protection, LifeArc supports products across the diagnostic, antibody engineering, and drug discovery pipelines.
In support of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs), Ridha Bouabid, WIPO’s Special Representative of the Director General on the SDGs was interviewed on Swiss TV (Radio Télévision Suisse, RTS). Ridha emphasized the important role WIPO Re:Search is playing towards achieving the SDGs: "The objectives of sustainable development require innovative technologies and the aim is to make all people benefit from this innovation. The (WIPO) Re:Search program builds research partnerships and research exchanges between North and South.”

**BVGH FundFinder Featured Awards**

**CARB-X 2018 Funding Round 2**

CARB-X was established in response to the US government’s Combating Antibiotic Resistant Bacteria (CARB) initiative and the UK government’s 2016 call for a concerted global effort to tackle antibiotic resistance. CARB-X is accelerating antibacterial products, leveraging $455 million in BARDA funds with matching funds from the Wellcome Trust. CARB-X supports early development of products within the following categories in descending priority: direct-acting therapeutics for Gram-negative infections, diagnostics, prevention (e.g. vaccines, microbiome, and devices), indirect acting therapeutics, and direct-acting therapeutics for Gram-positive infections. Applications for Round 2 must be submitted online June 1 through June 8, 2018, 5 pm EST. Click here for more information on the scope of the 2018 Funding Round 2, and here for more information on the application process.

- **Funding amount:** Applicants must be in a financial position to contribute at least 30% of the cost of the project. Applicants from larger or better-resourced organizations are encouraged to propose higher amounts of cost share.
- **Funder:** CARB-X
- **Deadline:** June 8, 2018
- **Eligibility:** Applicants must have a legal entity with drug development capabilities, financial ability to cover cost share of at least 30% of the total cost of the project, and capabilities in business development and technology transfer. Click here for more information on eligibility.

**3rd Annual Advancing Healthcare in Africa Workshop in Johannesburg**

Emory University invites innovative scientists focused on developing healthcare solutions to apply to attend the third annual Advancing Healthcare Innovation in Africa (AHIA) summer conference and commercialization program, a partnership with the African Network for Drugs and Diagnostics Innovation (ANDi). The conference take place July 9-11, 2018 in Johannesburg, South Africa. Select scientists from the conference will be invited to receive training from Emory University professors, industry professionals from companies such as Pfizer, entrepreneurs who have sold multiple businesses, and world-class researchers. AHIA will cover flight, hotel, and workshop expenses, and any additional commercialization support. The conference will cover topics such as business development, intellectual property, seeking funding, investor outreach, and business plan creation. To learn more, click here.

For more information about BVGH FundFinder, please email Cathy Manner.
Highlighted Contributions

Webinar: Searching and Analyzing 3D Protein-Ligand Structures Using PDBe Web Services
Abhik Mukhopadhyay, Scientific Database Curator at the European Bioinformatics Institute (EBI) will instruct webinar participants on searching and analyzing 3D protein-ligand structures using Protein Data bank in Europe (PDBe). Abhik will also demonstrate some PDBe web services that medicinal and computational chemists will find useful in understanding how small molecules interact with proteins. The webinar will be held Wednesday, May 23rd from 4:00 - 5:00 pm CEST. For more information, click here.

Lifelong Learning in the Biomedical Sciences from EMBL: Science, Technology, and Innovation for Upskilling Knowledge-Based Economies in Africa
The Africa Union’s shared vision for 'the Africa we want' envisions a future grounded on knowledge-based economies. Such economies require accelerated development of career structures in the science, technology, and innovation sectors. Changes are afoot in supporting new approaches in these fields. Professor Kevin Marsh of the University of Oxford will map out these changes and their implications for career development for African researchers. Professor Marsh will be joined by Professor Trudie Lang (University of Oxford) and Dr. Allan Pamba (GlaxoSmithKline). The webinar will be held Friday, May 18th from 7:00 - 8:00 am EDT. For more information, click here.

Upcoming Global Health Events

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Mailing address: 401 Terry Avenue N., Seattle, WA 98109
Dear WIPO Re:Search Members and Friends,

Malaria is inarguably one of the world’s leading global health challenges. Despite the incredible advances (global malaria deaths are down from 839,700 in 2000 to 445,000 in 2016), we find ourselves at a critical junction. The Bill & Melinda Gates Foundation reports that if we continue with our current control efforts, the number of new malaria cases per 1,000 people will only decrease from 29 to 28 by 2030. At present, there is no existing mechanism for the myriad of stakeholders to congregate and join forces in cooperative action against malaria. The inaugural Malaria World Congress, with its initiatives underscoring collaborative action and malaria elimination, aims to address this gap.

BVGH has organized two main activities at the 1st Malaria World Congress: an invite-only Funds in Trust (FIT2) colloquium, and an open-invitation FIT2 panel session. These events will involve key stakeholders from the Government of Australia, WIPO, BVGH, and WIPO Re:Search Member institutes. Through presentations, panel sessions, and networking, attendees will share ideas and explore partnership opportunities. Read on to learn more about these events.

Novartis recently released a malaria-centered special edition newsletter. Read the newsletter to learn how Novartis has committed to malaria elimination; why Patrice Matchaba, Head of Global Health and Corporate Responsibility at Novartis, believes that malaria can be wiped out for good; and how scientists in Mali are overcoming hurdles to test experimental antimalarials.

We hope to see you at the 1st Malaria World Congress next month! Please reach out to Cathy Manner if you are interested in setting up a WIPO Re:Search partnering meeting at the Congress.

Sincerely,
Jennifer Dent
President, BVGH

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Special Announcements

Available now: Free streaming of the new documentary Minutes to Die

WIPO Re:Search Members are invited to a private, online screening of the documentary Minutes to Die, an eye-opening account of the neglected crisis of snakebite in impoverished communities around the world. Directed by James Reid and produced by the Lillian Lincoln Foundation, Minutes to Die takes viewers to the homes and hospitals of snakebite victims, meetings of public health officials from the World Health Organization, and labs where scientists are manufacturing antivenom and new antidotes. Snakebite envenoming kills nearly as many people in one month as the entire 2014-2015 Ebola virus disease crisis did in two years. Socially responsible organizations and partners are vitally needed now to give a voice to these voiceless victims.

Click here to stream Minutes to Die (Password: BVGH). The film stream will be available until June 30th, 2018.
Completed FIT2 Fellowships

In 2016 the Government of Australia contributed funding to WIPO (Funds in Trust 2 [FIT2]) to support the training of East African and Indo-Pacific researchers at research institutes. In 2017 BVGH matched trainees with host organizations and developed plans for their research projects and training. Thus far six FIT2 fellowships have been completed. Meet these FIT2 fellows and their hosts below.

Fellow Institutes
- EIMB: Eijkman Institute for Molecular Biology
- icddr,b: International Centre for Diarrhoeal Disease Research, Bangladesh
- ITB: Institut Teknologi Bandung
- PNGIMR: Papua New Guinea Institute of Medical Research

Host Institutes
- GRIDD: Griffith Institute for Drug Discovery
- UM: University of Melbourne
- WEHI: Walter and Eliza Hall Institute of Medical Research

Prof. Kathy Andrews and Vicky Avery (GRIDD), Dr. Shafiu Alam (icddr,b)
- Training in Malaria Drug Discovery with Emphasis on Natural Product Drug Discovery

Prof. Leann Tilley and Dr. Natalie Spillman (UM), Ms. Tahmina Ahmed (icddr,b)
- Probing the Ubiquitination System as a Target for Developing New Antimalarials

Assoc. Prof. Wai-Hong Tham (WEHI), Dr. Indra Wibowo (ITB)
- Identification of Functional Blocking Antibody to Inhibit the Entry of the Malarial Parasite in Red Blood Cells

Prof. Alan Cowman, Assoc. Prof. Wai-Hong Tham, and Dr. Diana Hansen (WEHI), Dr. Rintis Noviyanti (EIMB)
- Identifying Candidate Targets for Naturally Acquired Immunity for the Design of Novel Antimalarial Vaccines

Prof. Alan Cowman and Dr. Diana Hansen (WEHI), Dr. Tedjo Sasmono (EIMB)
- Identifying Genetic Biomarkers for Disease Susceptibility

Assoc. Prof. Alyssa Barry (WEHI), Ms. Dulcie Lautu (PNGIMR)
- Molecular Surveillance and the Development of Genomic Tools for Malaria Control
Onchocerciasis affects 18 million people in tropical countries. Current treatments kill the first-stage larvae (microfilariae), but there are no existing treatments against the adult larvae (macrofilariae). As onchocerciasis is the second leading cause of infectious blindness, it is imperative to develop a novel treatment that fills critical gaps in the pipeline. Professor Fidelis Cho-Ngwa – a FIT1 fellow who visited Novartis for three months – at the University of Buea, is working toward the discovery and development of novel drugs that target *Onchocerca* macrofilariae. To support Fidelis’ efforts, Eisai Co., Ltd. agreed to share several classes of inhibitors, including kinase inhibitors and calcium channel blockers, with Fidelis to screen against macrofilariae.

FIT2 fellow Dr. Mohammad Shafiul Alam from the International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b) recently completed his six-month FIT2 sabbatical with Professors Vicky Avery and Kathy Andrews at the Griffith Institute for Drug Discovery (GRIDD), Griffith University, in Australia. Through his sabbatical, Shafiul gained new skills towards the discovery and development of compounds targeting different *Plasmodium* lifecycle stages. During his sabbatical, Shafiul gave a seminar at GRIDD entitled “Current malaria situation in Bangladesh: relevance to new antimalarials.”

### Partnership Hub Central

**Malaria World Congress FIT2 Panel Session – Wednesday, July 4th from 10:30am-12:30pm**

*Accelerating Malaria R&D through International Collaborations*

The Funds in Trust (FIT2) research sabbatical program brings together government entities, a United Nations agency, a nonprofit organization with ties to the pharmaceutical industry, and academic research institutes from across the globe. Aligning with the 1st Malaria World Congress’ vision and objectives, this [FIT2 session](#) will demonstrate the value of cross-sector partnerships, highlight collaboration best practices, and present how attendees can get involved in collaborative efforts that advance their – and others’ – research activities.

Chaired by Ms. Patricia Kelly, Director General, IP Australia, the panel session will feature presentations from FIT2 fellows and hosts.

BVGH encourages anyone who is attending the 1st Malaria World Congress to come to this important event.
BVGH FundFinder Featured Award

Royal Academy of Engineering: The 2019 Africa Prize for Engineering Innovation

The 2019 Africa Prize for Engineering Innovation encourages sub-Saharan African engineers to develop scalable solutions to local challenges, underscoring engineering as an enabler of improved quality of life and economic development. Applications are invited from innovators in sub-Saharan Africa who have developed an innovative service or product that can provide scalable solutions, with an emphasis on sustainable social and economic development. Shortlisted applicants will receive an eight-month package of tailored support to help them achieve commercial success, consisting of three week-long immersion sessions and supplemented by remote support. For more information, click here.

**Funder:** The Royal Academy of Engineering  
**Funding Amount:** The top applicant will be awarded £25,000, and three runners-up with receive £10,000 each.  
**Deadline:** July 23, 2018  
**Eligibility:** Applicants must have developed (or co-developed), or be in the process of developing (or co-developing) a new technological innovation. Applicants should anticipate leading the creation of a new business to commercialize their innovation. Click here for a list of eligible countries in sub-Saharan Africa.

For more information about BVGH FundFinder, please email Cathy Manner.

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<td>September 3 - 7</td>
<td>International Vaccine Institute 18th International Vaccinology Course</td>
<td>Seoul, South Korea</td>
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<tr>
<td>October 17 - 20</td>
<td>Keystone Symposium: 21st-Century Drug Discovery and Development for Global Health (S3)*</td>
<td>Berlin, Germany</td>
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* Graduate student and postdoctoral fellow scholarship deadline is June 19th, click here for more information.

* Known as EMD in the US and Canada | ** Known as Merck & Co., Inc. in the US and Canada
Dear WIPO Re:Search Members and Friends,

It is hard to believe we are now halfway through 2018! I am pleased to announce that BVGH has already surpassed our goal of establishing eight targeted collaborations in 2018, with nine agreements executed thus far. These partnerships span six infectious diseases and include both drug discovery and diagnostic development partnerships.

Last month, Medicines Development for Global Health (MDGH) and the World Health Organization Special Programme for Research and Training in Tropical Diseases (TDR) announced the FDA’s approval of moxidectin, the first new treatment for onchocerciasis in 20 years. BVGH warmly congratulates MDGH and TDR on achieving this important milestone.

In addition to the approval of moxidectin, the MDGH was awarded a priority review voucher (PRV). In TDR Director John Reeder’s words, “this voucher to MDGH fully meets the original spirit of the PRV programme to promote research and development of affordable and accessible drugs for neglected tropical diseases. Without this programme, MDGH would not have been able to raise the funds to complete all of work for the new drug application.”

Presently, there are several tropical diseases that are PRV-eligible. However, there is one major constituent that is not encompassed: foodborne trematodiases. The WHO estimates foodborne trematodes are responsible for 200,000 illnesses, and over 7,000 deaths annually. This has resulted in more than 2 million disability-adjusted life-years globally. In solidarity, I recently supported the submission of PATH’s letter to the FDA, requesting that foodborne trematodiases be added to the tropical diseases qualifying for a PRV.

I am pleased to welcome our newest WIPO Re:Search Member, the University of Florida.

Sincerely,
Jennifer Dent
President, BVGH

Special Announcements


The 21st-Century Drug Discovery and Development for Global Health symposium, part of the Keystone Symposia Global Health Series (supported by the Bill & Melinda Gates Foundation) aims at addressing the urgent need for novel and transformative medicines for infectious diseases. With a focus on parasitic and bacterial diseases including malaria, neglected tropical diseases (NTDs), diarrheal disease, and tuberculosis, the 21st-Century Drug Discovery and Development for Global Health symposium will improve understanding of the disease burdens and challenges of developing new therapies, highlight progress towards new drug candidates,
and foster collaboration from research to the clinic. The symposium is targeted towards basic scientists and drug discovery and development experts interested in understanding of the global health landscape.

Plenary session topics include, but are not limited to:
- Robust Target Validation – What Does it Mean?
- Workshop 1: Novel Clinical Trial Design
- Improving Target and Phenotypic-Based Approaches
- Workshop 2: Opportunities for Repurposing to Discover New Candidates or Mature Starting Points
- Translational Tools for Predicting Efficacy and Resistance

The symposium will be held **October 17-20, 2018 in Berlin, Germany**. For more information click [here](#).

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**UCSD Launches New Center for Anti-Parasitic Drug Discovery**

Leveraging its strengths in molecular biology, clinical research, and pharmaceutical sciences, the University of California, San Diego (UCSD) has launched a new Center for Anti-Parasitic Drug Discovery and Development. The new center will involve 15 research and clinical faculty representing three schools and five departments at UCSD. “No other center is equipped to study these many organisms and target the diseases they cause,” noted Dr. Jim McKerrow, Dean of the Skaggs School of Pharmacy and Pharmaceutical Sciences, head of the new center, and WIPO Re:Search investigator, “no other entity — academic, government or industrial — covers the spectrum of parasite research and drug discovery from basic science to clinical trials at one site.”

The drug development pipeline will be supported by UCSD’s Altman Clinical and Translational Research Institute, where researchers will have the capacity to carry out the entire drug discovery and development pipeline, including human clinical trials.

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**WIPO Re:Search Statistics**

Click [here](#) for a list of WIPO Re:Search Members.
Click [here](#) for a list of WIPO Re:Search collaborations.
Cornerstones of Collaboration

**Novel Treatments for Leishmaniasis**

More than one billion people in over 80 countries are at risk for leishmaniasis. As existing drugs are less than optimal, new therapeutics are needed to combat this debilitating disease. In order to support these efforts, Eisai Co., Ltd. will share a peroxisome proliferator-activated receptor (PPAR) agonist with Dr. Tanya Parish at the Infectious Disease Research Institute (IDRI). In the hopes of identifying new candidate therapeutics, Dr. Parish’s lab will screen the PPAR agonist against intracellular *Leishmania donovani* using their novel high-content imaging assay.

**Combating Multi-Drug Resistant Tuberculosis**

Multi-drug resistant tuberculosis (TB) is a growing threat to global health. Drs. Tanya Parish and Alyssa Manning at the Infectious Disease Research Institute (IDRI) are working toward the discovery and development of new drugs that concurrently target *Mycobacterium tuberculosis* (Mtb) while promoting immune response to infection. To support these efforts, Eisai Co., Ltd. will provide the investigators with phosphodiesterase (PDE) V inhibitors and calcium channel blockers for screening against intracellular *Mtb* using IDRI’s novel high-content imaging system.

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**New Member Announcement**

Located in Gainesville, Florida, the University of Florida (UF) attracts over $700 million in research annually. Through the Emerging Pathogens Institute, UF researchers are working to prevent and contain new and re-emerging diseases, with a focus on vector-borne diseases, tuberculosis, foodborne illnesses, and antimicrobial resistance (AMR). Further, through the Institute for Therapeutic Innovation and new technologies such as a hollow fiber infection model, researchers are optimizing drug regimens to kill pathogens and quell AMR.

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**BVGH FundFinder Featured Awards**

**Grand Challenges Africa: Open Call for Letter of Intent on Drug Discovery**

This Grand Challenges Africa funding scheme seeks to support new drug discovery projects in Africa by identifying new chemical entities with potential for drug development for malaria, tuberculosis, and neglected tropical diseases (NTDs). Applicants will be selected based on scientific merit and potential to advance the drug discovery process. Awardees will benefit from a network of drug discovery scientists in Africa and across the globe, linking them to peers and mentors and providing them with access to resources and technologies. Applicants must describe how their proposals add value to existing infrastructure, and how activities will lead to a sustained opportunity for drug discovery within the region.

- **Funder:** The African Academy of Sciences, the Bill & Melinda Gates Foundation, Medicines for Malaria Venture (MMV), and the University of Cape Town Drug Discovery and Development Centre (H3D).
- **Funding Amount:** Innovation Seed Grants of up to $100,000 over 24 months
- **Deadline:** Letter of intent due July 18, 2018
- **Eligibility:** Applicants must work in drug discovery on the African continent and have a creative idea for a drug discovery project based on one or more of the following: Biological targets, biological screens or assays, small molecule starting points, in vitro and in vivo DMPK/ADME assays and related technologies.
Mobile Health: Technology and Outcomes in Low- and Middle-Income Countries (mHealth)

MHealth supports research to develop or adapt innovative mobile health technology for low- and middle-income countries (LMICs), and the health-related outcomes associated with implementation of the technology. The program aims to contribute to the evidence base for the use of mobile technology to improve clinical outcomes and public health, and build research capacity in LMICs by establishing research networks. MHealth includes the use of mobile and wireless devices (cellphones, tablets, etc.) to improve health outcomes, health care services, and health research. The developed or adapted mHealth technology can include external hardware or software components for mobile or wireless devices. For specific information regarding the award, click here.

- **Funding amount:** Applicants may request up to $125,000 direct costs per year for up to 2 years.
- **Funder:** National Institutes of Health (NIH), Fogarty International Center
- **Deadline:** Letter of intent due August 1, 2018
- **Eligibility:** U.S. and non-domestic organizations are eligible to apply. Non-domestic entities are restricted to higher education institutions and other non-profit organizations in LMICs, as defined by The World Bank.

For more information about BVGH FundFinder, please email Cathy Manner.

Highlighted Contribution

**Seq-Well: Single-Cell RNA Sequencing**

The Shalek lab at the Massachusetts Institute of Technology (MIT) and the Ragon Institute have co-developed Seq-Well, a portable, low-cost platform for single-cell RNA sequencing designed to be compatible with low-input, clinical biopsies. Single-cell RNA sequencing enables researchers to identify the cell types, states, lineages, signaling pathways, and biomarkers active within complex specimens or even seemingly homogenous cell populations. It can also help uncover the mechanisms underlying cellular responses to the environment, disease, or drugs to aid in identifying novel targets for future development or biomarkers for diagnostic assays. To maximize impact and promote innovation, the investigators have published a manuscript detailing the development and validation of the Seq-Well platform, and provide in-depth protocols and videos describing how to perform Seq-Well experiments.

Upcoming Global Health Events

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<td>American Society of Tropical Medicine and Hygiene Meeting (ASTMH)</td>
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Dear WIPO Re:Search Members and Friends,

We are excited to announce the release of our WIPO Re:Search Mid-Year Report 2018! Over the first half of the year, BVGH established ten new collaborations and recruited five new Members. Read the Report to learn how the BVGH team is well on its way to achieving and surpassing its goals and deliverables for 2018.

Two WIPO Re:Search Members, the Center for Infectious Disease Research (CIDR) and Seattle Children’s Research Institute (SCRI), have made a major announcement: CIDR will merge with SCRI’s infectious disease division. This merger will create the largest pediatric infectious disease research program in the United States, capitalizing on the clinical expertise of SCRI and the laboratory skills of CIDR. “Our expertise is more slanted towards bedside, theirs towards bench, so together it’s more balanced,” SCRI President Jim Hendricks told GeekWire.

Last month, the FDA announced the approval of Krintafel (tafenoquine) for the radical cure of Plasmodium vivax malaria. This first ever single-dose medicine to prevent the relapse of P. vivax malaria is a major contribution towards eradication efforts. Congratulations to WIPO Re:Search Members GlaxoSmithKline (GSK) and the Medicines for Malaria Venture on this groundbreaking treatment. Learn more here.

The following two upcoming WIPO Re:Search events will be of interest to our Members:

1. **WIPO Re:Search quarterly teleconference, Thursday, August 23rd, 2018 at 7:00 am PDT.** WIPO will provide a general update that will include planning for upcoming events as well as the launch of new Member resources. BVGH will brief participants about our newest Members, ongoing and new collaborations, recent publications, and upcoming events. Together, WIPO and BVGH will provide Members with an update on the implementation of the WIPO Re:Search Strategic Plan 2017-2021. Please RSVP to Daniela Valencia.

2. **“WIPO Re:Search: Collaborative Innovation for Health” side event at the WIPO General Assemblies (Geneva, Switzerland), Thursday, September 27th, 2018.** Please join WIPO Director General Francis Gurry and me for a panel session focused on WIPO Re:Search’s advances in accelerating R&D for promising product candidates, in addition to highlighting WIPO’s capacity-building successes as exemplified by the Funds in Trust (FIT) program supported by the Government of Australia.

Sincerely,

Jennifer Dent
President, BVGH

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**Special Announcements**

**Featuring Three Recent Publications by WIPO Re:Search Collaborators**
Through an ongoing collaboration, Dr. Fabrice Boyom at the University of Yaoundé 1 and Dr. Bill Baker at the University of South Florida (USF) have partnered to further natural product antimalarial drug discovery efforts. The investigators have successfully identified the compounds as having good antiplasmodial activity, and are now working to isolate the active ingredients from the crude extracts and fractions. The researchers recently co-published their findings in *Parasitology Research*, authoring the first publication to show the effect of conditioned media on the antiplasmodial potential of endophytic fungi.

Onchocerciasis is the second leading infectious cause of blindness in the world, yet treatment options remain very limited. Moxidectin was recently approved by the US FDA as the second recommended drug treatment option following ivermectin. However, both drugs are limited in that they are only effective against microfilariae, and are unable to kill the adult *Onchocerca* parasite worms. Dr. Fidelis Cho-Ngwa at the University of Buea and Dr. Raymond Andersen at the University of British Columbia (UBC) have been collaborating through WIPO Re:Search to study the antifilarial activities of two Cameroonian medicinal plants, *Lantana camara* and *Tamarindus indica*, locally used to treat onchocerciasis. The investigators recently co-published their findings in *PLoS NTDs*, reporting for the first time the anti-onchocercal activities of these locally consumed medicinal plants and identifying a potential lead for further development that appears effective against both adult and microfilarial *Onchocerca* parasite worms.

*Erythrophleum ivorense* is a tree that grows in tropical parts of Africa and has been shown to possess broad-spectrum antimicrobial activity. In collaboration with Dr. Conor Caffrey at the Center for Discovery and Innovation in Parasitic Diseases (CDIPD), University of California, San Diego (UCSD), Dr. Christian Agyare at Kwame Nkrumah University of Science and Technology (KNUST) was interested in determining the phenotypic effects of *E. ivorense* on two developmental stages of *S. mansoni*: the post-infective larvae and adult parasites. Methanol leaf and stem bark extracts of *E. ivorense* were successively fractionated and demonstrated activity against the post-infective larvae (stem and bark) and adult parasites (bark). The research was in part performed by Ms. Gertrude Kyere-Davies from Dr. Agyare’s research group. Ms. Kyere-Davies spent six months at the CDIPD, and data from this FIT fellowship resulted in a publication in the *Journal of Parasitology Research*. These results provide the first step in the potential discovery of new treatments for schistosomiasis using locally sourced African medicinal plants.

**WIPO Re:Search Statistics**

Click [here](#) for a list of WIPO Re:Search Members.
Click [here](#) for a list of WIPO Re:Search collaborations.
Cornerstones of Collaboration

Schistosomiasis affects as many as 240 million people globally, and more than 700 million people in endemic regions are at risk. The treatment and control of schistosomiasis relies on a single drug, praziquantel, which was discovered 40 years ago. Raising concerns over the possibility of drug resistance, it is critical to develop novel and potent antischistosomal molecules. Leveraging Nigeria’s natural resources, Professor Alexander Odaibo at the University of Ibadan has identified several crude botanical extracts with activity against Schistosoma. To support Professor Odaibo’s drug discovery efforts, Professor Yun Jiang Feng from Griffith University will perform activity-guided fractionation to isolate and identify the extracts’ compounds with antischistosomal activity.

New Member Announcements

The University of Papua New Guinea (UPNG) was established in 1965 as the country’s first institution of higher learning. It is now a leading teaching and research university with strong networks and collaborations with international research and professional organizations. The UPNG experience is founded on 50 years of a strong, dedicated, and rich culture of producing educated leaders for Papua New Guinea, the South Pacific, and the global community. With established schools across a range of educational disciplines, such as business administration, humanities and social sciences, law, medicine and health sciences, and natural and physical sciences, UPNG’s mission is to deliver excellent education and research results for nation building and global advancement towards an innovative and empowered society.

Founded in 1986, the Burnet Institute traces its origins to a small virus laboratory with only 10 staff. Today, Burnet boasts over 400 staff and students, and an annual budget exceeding AU$50 million. Burnet’s mission is to achieve better health for vulnerable communities by accelerating translational research. The institute’s programs represent a breadth of technical skills, and include research themes such as maternal and child health and disease elimination.

Partnership Hub Central

Call for Scientists: Join the Global Partnership for Zero Leprosy Research Agenda Working Group

The Global Partnership for Zero Leprosy is launching the Research Agenda Working Group to develop an aligned, prioritized research agenda and support advocacy for investment. Chaired by Fareed Mirza (Head of Research, Novartis Foundation), the working group will develop research priorities in seven areas by assessing current research, identifying gaps, and prioritizing the new research needed to reach the goal of zero leprosy. To be involved in the working group, participants must meet the following criteria:

- Expertise in one of the sub-group topic areas
- Availability to participate in conference calls during the September-October 2018 timeframe
- Ability to review drafts and provide comments within a short timeframe

Persons affected by leprosy, country programme managers, and scientists and researchers in leprosy or other NTDs are encouraged to apply. Apply for membership here before August 17, 2018.
Advancing Healthcare Innovation in Africa: 3rd Annual Conference

Through the Advancing Healthcare Innovation in Africa (AHIA) partnership, Emory University, the African Network for Drugs and Diagnostics Innovation (ANDi), and BVGH unite towards a shared goal: saving lives with innovative health products and services created by Africans for Africans. Supported by Pfizer and instituted in 2015, AHIA promotes the advancement of health innovation and technologies in Africa by advising, educating, and training African scientists in the business and legal aspects of the healthcare sector.

AHIA recently held its 3rd Annual Conference in South Africa. During the three-day conference, leading professionals provided advice in the scientific, business, and legal aspects of healthcare entrepreneurship. Attendees included eight African entrepreneurs (selected from hundreds of applicants) from four African countries. The entrepreneurs’ ideas ranged from diagnostic kits to medical devices. Emory University students and faculty members formed teams and facilitated the creation of development plans for each of the participating technologies. One of the African scientists reported of his experience with the Emory faculty, “I call these people scientific philanthropists. [This experience] has opened my eyes to the science of business and the business of science.”

BVGH FundFinder Featured Awards

EDCTP Research and Innovation Action: Diagnostic Tools for Poverty-Related Diseases

The purpose of this call is to provide funding towards the development and uptake of rapid, accurate, cost-effective, scalable and field-friendly diagnostic tools for poverty-related diseases (PRDs). Projects should focus on validation of the clinical performance and/or implementation of new or improved diagnostic tools and technologies for the detection of any of PRDs, including co-infections. The proposed tools and technologies should improve the performance of diagnosis, prediction, monitoring, intervention, or assessment of therapeutic response, with a significant impact on clinical decision and health outcomes. Proposals should focus on late-stage development (e.g., evaluation and/or demonstration phase trials) or implementation studies in sub-Saharan Africa. Diagnostic algorithms to detect multiple infections are also eligible.

- **Funding amount:** Approximately US$21 million towards 6-12 awards
- **Funder:** European & Developing Countries Clinical Trials Partnership (EDCTP)
- **Deadline:** October 11, 2018
- **Eligibility:** Consortia comprising a minimum of three independent legal entities are eligible to apply. Two of the entities shall be established in two different Participating States (European Partner States) and one of the legal entities must be established in a sub-Saharan African country. All three legal entities shall be independent of each other.
**Joint WPR/TDR Small Grants Scheme for Implementation Research in Infectious Diseases of Poverty**

The objectives of this joint call are to strengthen the capacity of individuals and institutions in conducting implementation research, and to facilitate and strengthen implementation research in countries for the control and elimination of infectious diseases of poverty, including research that addresses issues related to the culture and environment that contribute to these problems.

- **Funding amount:** Up to US$15,000 per project (exceptionally larger grants up to US$20,000 may be considered)
- **Funder:** The World Health Organization (WHO) Western Pacific Region (WPR), and the Special Programme for Research and Training in Tropical Diseases (TDR), co-sponsored by the United Nations Children’s Fund (UNICEF), United Nations Development Programme (UNDP), the World Bank, and WHO
- **Deadline:** October 15, 2018
- **Eligibility:** Individuals submitting proposals must be researchers or health professionals working in infectious disease programs of Ministries of Health, national universities, or research institutions; and who are from and are working in low- and middle-income countries of the WHO WPR. See [here](#) for a list of eligible countries.

For more information about BVGH FundFinder, please email Cathy Manner.

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### Upcoming Global Health Events

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*Known as EMD in the US and Canada | ** Known as Merck & Co, Inc in the US and Canada*
Dear WIPO Re:Search Members and Friends,

September represents the start of a new academic year in many parts of the world, and it also ushers in a busy and exciting season for the WIPO Re:Search consortium.

The WIPO General Assemblies will be held from September 24 to October 2 in Geneva, Switzerland. Please join WIPO Director General Francis Gurry and me at the “WIPO Re:Search: Collaborative Innovation for Health” side event on Thursday, September 27. A moderated panel discussion will spotlight WIPO Re:Search’s successes in accelerating product R&D for neglected diseases and, through the Funds in Trust (FIT) fellowship program supported by the Government of Australia, training talented researchers from low- and middle-income countries (LMICs) to contribute to the battle against neglected diseases. BVGH recently highlighted the FIT program, and the important role it plays in promoting health security and economic prosperity in the Indo-Pacific region, in a submission to Australia’s Joint Standing Committee on Foreign Affairs, Defence, and Trade.

The WIPO General Assemblies side event will also feature the unveiling of the new WIPO Re:Search Resource Platform. The Platform is a way for Members to showcase their research, assets, and additional pertinent information on their individual profiles, as well as to explore collaboration opportunities by viewing other Member profiles and interacting via the Platform’s features. Please review and validate the information in the database pertaining to your institution prior to the launch, and send WIPO your feedback, questions, and comments.

The 67th Annual Meeting of the American Society of Tropical Medicine and Hygiene (ASTMH) will take place from October 28 to November 1 in New Orleans, Louisiana. Joseph Hargan-Calvopiña will be representing BVGH at the conference and will be happy to meet with you to discuss your WIPO Re:Search partnering interests. Please email him to arrange a time to meet.

In other exciting news, last month the TB Alliance launched a new clinical trial, SimpliciTB, that is evaluating an all-oral, four-drug tuberculosis regimen that could treat most forms of the disease, including multidrug-resistant tuberculosis, more quickly and effectively than current therapies. A shorter and simpler treatment could mean better adherence, resulting in more positive outcomes. Learn more here.

As always, please forward this Snapshot to your colleagues and reach out to us with any partnering requests or ideas.

Sincerely,

Jennifer Dent
President, BVGH
The World Health Organization estimates that over 25 million people suffer from onchocerciasis globally. Available diagnostics are unable to detect impalpable adult worms that reside deep beneath the skin, resulting in the standardization of long-term, preventative drug treatments that can endure for over 20 years corresponding to the worm lifespan. Dr. Stephen Ghogomu at the University of Buea has identified two secretory proteins as potential biomarkers for adult-stage onchocerciasis. He has shared the amplified PCR products with Dr. Horacio Bach at the University of British Columbia, who will express and share the recombinant antigens with Dr. Ghogomu to test the antibody response via ELISA with the goal of developing an on-site antibody-based device to detect adult stage *O. volvulus*.

Parasitic infections currently affect over one billion people around the world, including millions of people in the U.S. each year. Drs. Alexis Kaushansky and Bart Staker at the Center for Infectious Disease Research (CIDR) are working to further anti-parasitic drug discovery. They have previously demonstrated Bcl-2 family inhibitors’ efficacy in *Plasmodium* and *Toxoplasma* models of infection. To support their efforts to expand screening against other neglected parasitic infections, Takeda will provide the investigators with Bcl-2 family inhibitors to kill parasite infected cells including *P. falciparum*, *P. vivax*, *C. parvum*, *T. cruzi*, *Toxoplasma*, and *Leishmania* sps. To further support this project, BVGH has provided a Letter of Support for the CIDR researchers’ NIH grant application.
Johnson & Johnson has provided Prof. Tanya Parish, Senior Vice President, Drug Discovery, and Dr. Alyssa Manning, Scientist II, TB Drug Discovery Group, Infectious Disease Research Institute (IDRI), with its Jump-stARter library to screen against intracellular *M. tuberculosis* and *Leishmania* parasites. Prof. Parish and Dr. Manning will use IDRI’s high-content imaging system to perform the screens.

Infectious diseases remain a substantial cause of mortality around the world. This is particularly true in resource-poor areas, where access to treatment is sparse and people fight a multitude of infections simultaneously. Dr. Fabrice Boyom at the University of Yaoundé I, Cameroon is working to identify hit inhibitors of critical parasitic metabolic pathways to develop high-need drugs against HAT, leishmaniasis, and malaria. To best support his drug discovery efforts, Johnson & Johnson’s Computer-Aided Design (CAD) team conducted analysis to select the best compounds for this collaboration and will be sharing the selected compounds with Dr. Boyom for screening. Johnson & Johnson also provided a Letter of Support for Dr. Boyom’s MMV grant application with the hopes of acquiring funding to further their collaborative drug discovery efforts.

Johnson & Johnson will provide Dr. Peter Roy, Professor of Molecular Genetics at the University of Toronto, with its Jump-stARter library to screen in a *C. elegans* model of soil-transmitted helminths. Dr. Roy will employ his novel assay to identify molecules that target helminths under variable host conditions.

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**IP in Focus**

You’re invited to a special sneak peek of the new WIPO Re:Search Resource Platform!

The new WIPO Re:Search Resource Platform is a way for Members to showcase their research, assets, and additional pertinent information on their individual profiles. Members can also explore collaboration opportunities by viewing other Member profiles and interacting via the Platform’s features.

The Resource Platform will be officially launched on September 27, 2018 during the WIPO Re:Search side event at the WIPO General Assemblies. Before the unveiling takes place, please review and validate the information in the database pertaining to your institution.

**Next steps:**

- Access the Resource Platform and sign up for a WIPO Re:Search user account: [https://research.wipo.int/](https://research.wipo.int/)
- Validate your institution’s information
- Explore the Resource Platform and send WIPO your feedback, questions, and comments

Email Daniela Valencia for more information.
**BVGH FundFinder Featured Awards**

**EDCTP: Strategic Action for the Comparison, Selection and Development of Malaria Vaccine Candidates**

The purpose of this Call for Proposals is to support one large-scale strategic action (clinical research activities) that is part of a bigger portfolio of clinical trials with the capacity to compare and select the most promising malaria vaccine candidates, and manage their progress through clinical development. This should be achieved by establishing an objective set of stage-gate criteria that can be used for comparing and evaluating a diverse set of vaccine candidates developed by different research groups, with the aim of bringing them together in a joint portfolio.

- **Funding amount:** €18 million
- **Funder:** European & Developing Countries Clinical Trials Partnership (EDCTP)
- **Deadline:** November 1, 2018
- **Eligibility:** Consortia comprising a minimum of three independent legal entities are eligible to apply. Two of the entities shall be established in two different Participating States (European Partner States) and one of the legal entities must be established in a sub-Saharan African country. All three legal entities shall be independent of each other.

**NIH: Fogarty Emerging Global Leader Award**

The Fogarty Emerging Global Leader Award aims to provide research support and protected time to a research scientist from a low- or middle-income country (LMIC) who holds an academic junior faculty position or research scientist appointment at an LMIC academic or research institution. Applications are invited from LMIC research scientists from any health-related discipline who propose both critically needed career development activities and a research project that is highly relevant to the health priorities of their country.

- **Funding amount:** Award budgets are composed of salary and other program-related expenses. NIH will contribute up to $75,000 (for a minimum of 75% effort or 30 hours per week) per year toward the salary of the career award recipient, and up to $30,000 per year toward the research development costs of the award recipient. The total project period should be a minimum of 3 years and may not exceed 5 years.
- **Funder:** National Institutes of Health (NIH)
- **Deadline:** Letter of Intent due October 8, 2018; application due November 7, 2018
- **Eligibility:** Applications must be submitted by academic or research institutions in LMICs, as defined by the World Bank; low-income, lower-middle-income, and upper-middle-income countries are included. Candidates must be LMIC citizens; must currently hold an academic junior faculty position or research scientist appointment at the LMIC applicant institution; and must have been in this position for at least one year at the time the application is submitted.

For more information about BVGH FundFinder, please email Cathy Manner.

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**Highlighted Contributions**

**Tuberculosis**

Many pathogenic organisms are showing alarming increases in antimicrobial resistance (AMR), threatening advances in modern medicine. In addition to multidrug-resistant tuberculosis (MDR-TB), extreme drug-resistant (XDR-TB) infections are on the rise. The success rate of MDR-TB treatment is only around 50%, and drops to around 25% for XDR-TB. There is urgent need for the development of new tuberculosis drugs with novel targets and mechanisms of action. This Snapshot highlights compounds that have repurposing potential for tuberculosis therapy:

- Carbonic anhydrase inhibitors
- CXCR2 antagonists
**HDAC inhibitors**  
**Proteasome inhibitors**  
**STING inhibitors**

For more information or to discuss potential collaborations involving these inhibitors, please contact Cathy Manner.

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<td>May 12 - 15, 2019</td>
<td><strong>Wellcome Centre for Anti-Infectives Research (WCAIR) Conference on Innovative Drug Discovery and Development</strong></td>
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*Known as EMD in the US and Canada | **Known as Merck in the US and Canada*
Dear WIPO Re:Search Members and Friends,

We are excited to announce that the WIPO Re:Search consortium is turning seven this month! In honor of this anniversary, we are pleased to share the updated partnership pipeline, which showcases how WIPO Re:Search is accelerating R&D for neglected tropical diseases (NTDs), malaria, and tuberculosis.

It was lovely to see some familiar faces at the WIPO General Assembly last month. WIPO Director General Francis Gurry welcomed Members and the Geneva community as he opened the WIPO Re:Search side event, which I had the pleasure of moderating. Promising WIPO Re:Search collaborations were featured by Members representing Merck & Co. (MSD), the Walter and Eliza Hall Institute of Medical Research (WEHI), National Institutes of Health (NIH)/National Institute of Allergy and Infectious Diseases (NIAID), and one of our newest members from Indonesia – Rintis Noviyanti of the Eijkman Institute for Molecular Biology. Amy Dietterich of WIPO concluded the program with the launch of the WIPO Re:Search Resource Platform.

BVGH and WIPO will be in Japan during the week of October 22 to introduce WIPO Re:Search to members of the Japan Pharmaceutical Manufacturers Association (JPMA). If you would like to meet with our team in Japan, please reach out to Cathy Manner.

The 2018 American Society of Tropical Medicine and Hygiene (ASTMH) Annual Meeting is coming up on October 28. Please email Joseph Hargan-Calvopiña if you would like to meet to discuss your WIPO Re:Search partnering interests.

BVGH would like to hear your thoughts and opinions on the WIPO Re:Search quarterly teleconferences, to help us improve participation in, and the quality of, the teleconferences. Please fill out our short survey here.

Professor Katherine Andrews, Deputy Director of the Griffith Institute for Drug Discovery (GRIDD) and participant in the WIPO Re:Search Funds in Trust (FIT) fellowship program supported by the Government of Australia, authored an article in WIPO Magazine describing her experiences as a FIT host and the importance of international research collaborations.

I am pleased to welcome our newest WIPO Re:Search Member, Ahmadu Bello University.

As always, please forward this Snapshot to your colleagues and reach out to us with any partnering requests or ideas.

Sincerely,
Jennifer Dent
President, BVGH
Special Announcements

**BVGH Authors Chapter in New Book on Public-Private Partnerships, IP**

The *Cambridge Handbook of Public-Private Partnerships, Intellectual Property Governance, and Sustainable Development* was published in September and launched at the Global Congress for Intellectual Property and the Public Interest. BVGH wrote Chapter 4, “Creating, Managing, and Advancing Collaborations: The Road to Successful Partnerships.” The online version is now available for institutional purchase/access [here](#).

**WIPO Re:Search Statistics**

[Image of WIPO Re:Search statistics]

Click [here](#) for a list of WIPO Re:Search Members. Click [here](#) for a list of WIPO Re:Search collaborations.

**Cornerstones of Collaboration**

**Novartis Shares Compounds to Aid in Drug Discovery for Non-Tuberculous Mycobacteria**

Found in environmental substrates such as water and soil, *Mycobacterium abscessus* (Mab), a distant relative of *M. tuberculosis*, is a rapidly-growing member of the non-tuberculous mycobacteria (NTM) group. Mab infections can cause lung disease similar to tuberculosis, as well as infections of the skin, soft tissue, and central nervous system, among others. Due to its intrinsic drug resistance – including resistance to drugs used to treat tuberculosis – Mab infections are difficult to treat and result in high mortality. To support the search for new drugs against Mab, **Novartis** will share a targeted collection of compounds with Professor Thomas Dick, Director of Antimicrobial Drug Discovery, **Public Health Research Institute**, to screen against the bacterium.
Currently, the drug praziquantel is the primary method of both prevention and treatment of schistosomiasis through mass drug administration campaigns. As diagnosis methods are limited to microscopy, which requires electricity and is therefore not applicable for in-field testing, or POC-CCA, which has been found to only have 60% sensitivity in its detection of *S. haematobium*, praziquantel is administered to entire communities without first identifying those actually infected with the parasite. To improve this, Dr. Chiaka Anumudu at the University of Ibadan has identified 54 human proteins as potential biomarkers for schistosomiasis and bladder pathologies with the goal to develop an on-site diagnostic device to detect *S. haematobium*. She is currently engaged in a WIPO Re:Search collaboration to provide support conducting proteomic work in order to repeat the studies and validate the results with a larger sample set. To further support her diagnostic development, Dr. Jose Gomez-Marquez and Dr. Kimberly Hamad-Schifferli at the Massachusetts Institute of Technology (MIT) have shared Ampli Blocks, a set of 40 different building blocks that enable lab workers around the world to assemble them in different ways to produce diagnostic devices. By supplementing the engineering of diagnostic development, Ampli Blocks allow researchers to focus on the biochemistry of detection and promote independent development of site-specific diagnostic devices. Dr. Anumudu will use these blocks as a platform to develop her diagnostic device.

**New Member Announcement**

**Ahmadu Bello University**, established in 1962, is a federal university in Zaria, Nigeria whose mission is to advance the frontiers of learning and break new grounds, through teaching, research, and the dissemination of knowledge of the highest quality; to establish and foster national and international integration, development, and the promotion of African traditions and cultures; and to produce high-level human power and enhance capacity building through retraining, in order to meet the needs and challenges of the catchment area, Nigeria, and the rest of the world. The largest university in Nigeria, Ahmadu Bello University encompasses 96 academic departments, 12 faculties, and 12 research institutes and specialized centers, including the Africa Center of Excellence (ACE) for Neglected Tropical Diseases and Forensic Biotechnology.

**IP in Focus**

**WIPO Re:Search Resource Platform Launched**

The new WIPO Re:Search Resource Platform is a way for Members to showcase their research, assets, and additional pertinent information on their individual profiles. Members can also explore collaboration opportunities by viewing other Member profiles and interacting via the Platform’s features.

**WIPO and IFPMA Launch New Online Patent-Search Resource to Help Health Agencies Procure Medicines**

The Patent Information Initiative for Medicines (Pat-INFORMED) is a unique resource in which patent holders provide information about patents covering approved medicines through a free, open access database.
Pat-INFORMED is a partnership between WIPO and the International Federation of Pharmaceutical Manufacturers and Associations (IFPMA), the global trade association representing the research-based pharmaceutical industry. Pat-INFORMED originated in the industry’s efforts to add clarity to patent information about medicines. WIPO’s globally recognized expertise in the organization and public dissemination of patent data will make an important contribution to the accessibility of patent information.

Learn more about Pat-INFORMED by watching a short video introduction.

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**BVGH FundFinder Featured Awards**

**Wellcome Trust: Collaborative Awards in Science**

Collaborative Awards promote the development of new ideas and speed the pace of discovery. The awards fund teams of researchers, consisting of independent research groups, to work together on the most important scientific problems that can only be solved through collaborative efforts.

- **Funding Amount:** Up to £4 million for up to 5 years
- **Funder:** Wellcome Trust
- **Deadline:** November 19, 2018
- **Eligibility:** Each applicant must be essential to the proposed collaborative research and have:
  - Proven research expertise and experience in their field
  - An academic or research post (or equivalent)
  - A salary for the duration of the award period

**Wellcome Trust: International Intermediate Fellowships (formerly Intermediate Fellowships in Public Health and Tropical Medicine)**

This scheme offers nationals of low- and middle-income countries the opportunity to lead their own research programs.

- **Funding Amount:** Unspecified; salary and research expenses covered
- **Funder:** Wellcome Trust
- **Deadline:** November 22, 2018
- **Eligibility:** Candidates should be driving their own research and be ready to lead an independent research program. Additionally each applicant must:
  - Be a national of a low- or middle-income country
  - Have research focusing on a health priority of a low- or middle-income country
  - Have a Ph.D. or be a clinically qualified doctor (and qualified to enter higher specialist training), vet, dentist, or psychologist
  - Have significant research experience
  - Have made important contributions to his or her area of research, including publications, patents, software development, or an impact on health policy or practice

For more information about BVGH FundFinder, please email Cathy Manner.

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**Member Spotlight**

**New Asset – Open Diagnostics and FairTrade Bio Platform**
The MIT Little Devices Lab has developed an Open Diagnostics and FairTrade Bio Platform to enable diagnostic innovation in all corners of the world. Driven by the belief that everyone deserves rapid and affordable diagnostics, researchers from LMICs are invited to submit project proposals to receive individually tailored diagnostic construction kits. The Open Diagnostics construction sets allow scientists, laboratory technicians and healthcare workers to make and design their own paper-based diagnostics in their own facility. The goal of an architecture for open diagnostics is to provide some starter tools and reagents that enable scientists to develop diagnostics through their own scientific ingenuity and homegrown bioresources and create a 21st social contract between researchers and patient volunteers.

New Asset – Ampli Blocks

A team of MIT investigators are transforming the standard approach to diagnostic development through their development of Ampli Blocks, a set of 40 different building blocks that lab workers around the world can easily assemble on their own in different ways to produce diagnostic devices. By supplementing the engineering of diagnostic development, Ampli Blocks allow researchers to focus on the biochemistry of detection and promote independent development of site-specific diagnostic devices. The blocks are inexpensive, costing about 6 cents for four blocks, do not require refrigeration or special handling, and can be sterilized and reused. The MIT Investigators are interested in partnering and sharing this technology to enable diagnostic development in LMICs. Learn more about MIT’s contribution by watching their video here.

Highlighted Contributions

Chagas Disease

Approximately 6 to 7 million people worldwide are estimated to be infected with Trypanosoma cruzi, the parasite that causes Chagas disease. Currently, Chagas disease is treated with benznidazole or nifurtimox which are almost 100% effective in curing the disease if given soon after infection at the onset of the acute phase. However, the efficacy of both diminishes the longer a person has been infected. Both benznidazole and nifurtimox are contraindicated for pregnant women, people with kidney or liver failure, and people with a background of neurological or psychiatric disorders. Additionally, up to 30% of chronically infected people develop cardiac alterations and up to 10% develop digestive, neurological or mixed alterations which may require specific treatment. Once the disease reaches the chronic stage it can result in significant disability with great social and economic impact due to unemployment and decreased earning ability. With approximately 70 million people at risk of contracting Chagas disease, it is imperative that new drugs are developed that are affordable, age-adapted, safe and efficacious. To support these drug discovery efforts, this Snapshot highlights compounds that have demonstrated repurposing potential against T. cruzi parasites:

- Topoisomerase II inhibitors
- Tyrosine kinase inhibitors
- Cysteine protease inhibitors
- Farnesyltransferase inhibitors

For more information or to discuss potential collaborations involving these inhibitors, please contact Cathy Manner.

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*Known as EMD in the US and Canada | **Known as Merck in the US and Canada

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Mailing address: 2101 4th Avenue, Suite #1950, Seattle, WA 98121
Dear WIPO Re:Search Members and Friends,

As the holiday season quickly approaches, we are pleased to celebrate with you the milestones we have made this year in our fight against neglected tropical diseases (NTDs), malaria, and tuberculosis. The BVGH team has established 18 new agreements and recruited seven new Members. More importantly, several WIPO Re:Search collaborations have advanced to the next stage of product development. Please check out our WIPO Re:Search partnership pipeline to see how these collaborations are moving forward.

BVGH and WIPO were in Tokyo last month to present WIPO Re:Search to members of the Japan Pharmaceutical Manufacturers Association (JPMA) and encourage Japanese companies to join the Consortium. Eisai and Takeda also described their experience participating in WIPO Re:Search and the benefits of membership for pharmaceutical companies. We thank the WIPO Japan Office for coordinating the visit and JPMA for organizing and hosting the event.

As always, please forward this Snapshot to your colleagues and reach out to us with any partnering requests or ideas.

Sincerely,
Jennifer Dent
President, BVGH

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Special Announcement

Eisai Launches Updated Website Highlighting Neglected Disease R&D Partnerships

Eisai’s research and development (R&D) activities are driven by the company’s commitment to developing and delivering innovative medicines that address the healthcare needs of patients worldwide. Eisai participates in multiple product development partnerships with global non-profit organizations to advance R&D for NTDs, malaria, and tuberculosis. In addition to its WIPO Re:Search collaborations, Eisai’s updated website showcases its partnerships with Drugs for Neglected Diseases initiative (DNDi), Medicines for Malaria Venture (MMV), and other institutions.
Cornerstones of Collaboration

GSK Provides Compounds to Aid in Antimalarial Drug Discovery

New malaria drugs with novel mechanisms of action are needed to address the growing problem of resistance to current medications. Dr. Adam Renslo, a Professor in the Department of Pharmaceutical Chemistry at the University of California, San Francisco (UCSF), is exploring an innovative approach to antimalarial therapy involving inhibition of a critical Plasmodium falciparum signaling pathway. GlaxoSmithKline (GSK) will provide compounds targeting the pathway, and Dr. Renslo and collaborators will screen the compounds for biochemical activity, validate hits against whole P. falciparum parasites, and prioritize the confirmed hits for medicinal chemistry optimization.

BVGH FundFinder Featured Award

Wellcome Data Re-Use Prize: Malaria

The Malaria Atlas Project (MAP) launched the Repository of Open Access Data (ROAD-MAP), which contains a wealth of data on malaria risk and intervention coverage — all of which is free to be accessed, re-analyzed, and re-used by anyone. The Wellcome Trust invites participants to pursue any research question or innovation that makes best use of the ROAD-MAP data. Submissions to the prize should generate a new insight, tool, or health application.

- **Funding Amount:** £15,000
- **Funder:** Wellcome Trust
- **Deadline:** March 2019
- **Eligibility:** Open to individuals and teams

For more information about BVGH FundFinder, please email Cathy Manner.
Member Spotlight

2018 Patents for Humanity Award Ceremony

The U.S. Patent and Trademark Office (USPTO) is recognizing innovators who use game-changing technology to meet global humanitarian challenges on November 27. Those interested in attending can register.

Highlighted Contributions

Dengue fever

One of the fastest growing infectious diseases in the world, dengue infects an estimated 390 million people annually. With almost half of the world’s population at risk, it is imperative that new drugs are developed that can be made available to those who need it most. To support such drug discovery efforts, this Snapshot highlights compounds that have demonstrated repurposing potential against the dengue virus:

- AMPK activators
- CaM (calmodulin) receptor antagonists
- COX-2 inhibitors
- DRD2 (dopamine d2 receptor) antagonists
- DRD4 (dopamine d4 receptor) antagonists

For more information or to discuss potential collaborations involving these compounds, please contact Cathy Manner.

Upcoming Global Health Events

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Dear WIPO Re:Search Members and Friends,

As 2018 draws to a close, BVGH celebrates with you, the WIPO Re:Search community, the many exciting achievements this year has brought. Consortium membership has grown to 140 organizations representing 40 countries, and we are pleased to welcome our newest Member, Usmanu Danfodiyo University, Sokoto (UDUS). WIPO Re:Search, our collaborations, and our sponsoring Member companies continue to be featured in major international presentations, publications, and other highly visible communications channels, in addition to this newsletter and BVGH’s social media platforms.

The 2018 Access to Medicine Index highlights the importance of collaborations—which are the foundation of WIPO Re:Search—in accelerating R&D for malaria, tuberculosis, NTDs, and other priority diseases. Eighteen new WIPO Re:Search collaborations were established this year, and we look forward to facilitating more R&D partnerships in 2019. Please reach out to Cathy Manner to discuss any partnering requests or ideas.

As we look ahead to the New Year, the BVGH team thanks you for your ongoing support and participation in WIPO Re:Search. We wish you the very best over the holiday season and in 2019.

Sincerely,

Jennifer Dent
President, BVGH

Click here for a list of WIPO Re:Search Members.
Click here for a list of WIPO Re:Search collaborations.
Cornerstones of Collaboration

Pfizer Shares Inhibitors for Tuberculosis Screening

Tuberculosis (TB) is one of the world’s deadliest diseases, infecting almost one fourth of the global population. In an effort to improve upon available treatment methods, Prof. Tanya Parish and Dr. Alyssa Manning are working toward TB drug discovery and development at the Infectious Disease Research Institute (IDRI). Their work focuses on the discovery of new drugs that are effective at curing drug-sensitive and drug-resistant TB with the added goal of shortening the time it takes to cure disease. To help support their drug discovery efforts, Pfizer has shared a PDE inhibitor for screening as a TB drug candidate.

New Member Announcement

Usmanu Danfodiyo University, Sokoto (UDUS) was founded in 1975 as one of the initial twelve federal government-owned universities in Nigeria. Now an established research university, UDOS has 10 faculties—including Health Sciences and Pharmaceutical Science—and a postgraduate school to provide master’s and doctoral training in the sciences and other disciplines.

BVGH FundFinder Featured Award

Accelerating Malaria Vaccine Discovery (R01)

The purpose of this funding opportunity is to support early-phase translational research that will generate new malaria vaccine candidates suitable for further downstream development and clinical evaluation. This research opportunity encourages studies that will lead to discovery of new vaccine candidates that prevent infection, ameliorate disease, and/or interrupt transmission caused by human malaria parasites, especially *P. falciparum* and *P. vivax*. 
• **Funding Amount:** Dependent on project scope, for up to five years
• **Deadline:** February 5, 2019
• **Funder:** National Institutes of Health (NIH)
• **Eligibility:** US and non-US entities; clinical trials not allowed

**Additional Funding Opportunities**

- **GHIT Fund Product Development Platform: Request for Proposals** – Deadline: January 7, 2019
- **TDR Clinical Research and Development Fellowships** – Deadline: March 7, 2019
- **Neglected Tropical Diseases Support Center: Operational Research on "Endgame" Challenges** – No deadline specified

For more information about BVGH FundFinder, please email Cathy Manner.

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**Member Spotlight**

**Tres Cantos Open Lab Foundation: Accelerating the Discovery of Medicines for Diseases of the Developing World**

The Tres Cantos Open Lab Foundation provides selected investigators with funding and access to GSK facilities, resources, and expertise to help them advance their own malaria, tuberculosis, kinetoplastid disease, and enteric drug discovery projects. By fostering close partnerships and alliances, the Open Lab acts as an incubator and accelerant to create a critical mass of knowledge around neglected diseases and develop desperately needed new medicines. Proposals are accepted on a rolling basis. Click here for more information.

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