## Agenda, Day 1: February 25, 2019 (Meals will be in Queen Mary; the main meeting room is King George V)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
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<tr>
<td>8:00-9:00</td>
<td>Registration and Breakfast</td>
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<td>9:00-9:30</td>
<td>Introductions and goals of the meeting</td>
<td>Stephanie James</td>
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<td>9:30-10:00</td>
<td>Proposed testing pathway for gene drive mosquitoes: Decision gate for moving to field trials</td>
<td>Fredros Okumu</td>
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| 10:00-11:00| Group Discussion: Modeling the toolkit for malaria elimination         | Moderator: Jaline Gerardin  
Rapporteurs:  Karen Tountas  
David O’Brochta |
|           | How do gene drive mosquitoes fit into the toolkit of products for malaria elimination/eradication?  
• How can models account for interactions with other malaria and vector control strategies?  
• What information do models need to make good predictions of the impact of gene drive mosquitoes?  
• Are there particular limitations of other vector control strategies that models should focus on in exploring the role of gene drive mosquitoes? |
| 11:00-11:30| Coffee/Tea                                                          |                                                 |
| 11:30-noon| Review of TPPs/PPCs for malaria transmission-blocking tools             | Larry Slutsker                                   |
| Noon-13:00| Review of current draft TPPs for gene drive mosquitoes                   | UCI Malaria Initiative  
Austin Burt |
| 13:00-14:00| Lunch                                                                |                                                 |
| 14:00-18:00| Group discussion: Assessing efficacy expectations for gene drive mosquitoes  | Moderator: Azra Ghani  
Rapporteurs:  Carolyn Buckee  
Nakul Chitnis |
| 14:00-15:30| Session 1                                                              |                                                 |
|           | What should we aim for in a first gene drive product? How is this informed by modeling?  
• What are the expectations of benefit for a first gene drive product? What would be considered minimally acceptable efficacy to justify releases in Africa?  
• How does this relate to different malaria transmission conditions in Africa? How might this inform selection of potential testing sites?  
• How might expectations for efficacy of gene drive mosquitoes change by the time a first gene drive candidate is ready for testing, as a result of ongoing malaria control and elimination efforts? How might this be taken into account in the TPP?  
• Should availability of a remediation strategy be taken into account in the TPP criteria?  
• If so, how might modeling inform this? |
| 15:30-16:00| Coffee/Tea                                                          |                                                 |
| 16:00-18:00| Session 2                                                              | Moderator: John Marshall  
Rapporteurs:  Andrea Beaghton  
David O’Brochta |
|           | How can modeling be used to predict the efficacy of gene drive mosquito products?  
• Do differences in existing models or models currently in development influence predictions? If so, how practically important is this and what should be done?  
• How do models take into account differences in products intended to reduce population size or change vector competence? Do downstream impact predictions depend on product characteristics?  
• What data is needed to adequately parameterize the models? |
Session 2 (continued)

- How should criteria for durability of efficacy be determined?
  - How does this relate to malaria reduction goals?
  - Can the timescale for evolution of resistance to the drive or effector mechanism be predicted? What data would be required?
  - Can other potential changes in the mosquito or parasite be predicted? What data would be required?

19:00  GROUP DINNER, 1212 Restaurant at the Royal Horseguards Hotel

Agenda, Day 2: February 26, 2019 (Meals will be in Queen Mary; the main meeting room is King George V)

8:00-9:00  REGISTRATION and BREAKFAST

9:00-10:30  Group Discussion: Translating to TPP efficacy criteria
  - How do malaria reduction goals translate to entomological and epidemiological criteria for gene drive mosquito products (transmission reduction, time to effect, duration of effect, ...)?
  - What realities need to be taken into account (other vector species and mosquito metapopulations, spatial ecology, immigration/emigration, ...) in setting TPP goals for entomological and epidemiological efficacy?
  - What geographic range should be considered (initial release site, regional, continent wide) in setting TPP goals?
  - How might release design influence efficacy results? What release strategies should be modeled?

Moderator: Ace North
Rapporteurs: Greg Lanzaro
Karen Tountas

10:30-11:00  COFFEE/TEA

11:00-12:30  Group discussion: Setting consensus efficacy characteristics
  - Are we currently able to agree on justifiable entomological and epidemiological efficacy criteria for a minimally acceptable product to bring to field testing?
  - Do these criteria differ for products intended to reduce vector population size or change vector competence?
  - What are realistic efficacy criteria for an ideal gene drive mosquito product? Does it have to be perfect?
  - Do these criteria differ for products intended to reduce vector population size or change vector competence?
  - If questions remain, what more needs to be done?

Moderator: Neil Ferguson
Rapporteurs: Shaibal Dasgupta
George Christophides

12:30-13:30  LUNCH

13:30-15:00  Group discussion: Relating efficacy criteria to measurable parameters
  - How can efficacy criteria be translated to measurable parameters? (in the lab/insectary, in the field)?
  - Life history parameters
  - Construct biology

Moderator: Tony Nolan
Rapporteurs: Geoff Turner
Nikolai Windbichler

15:00-15:30  COFFEE/TEA

15:30-17:00  Group discussion: Cost goals for gene drive mosquito products
  - How do cost goals relate to goals for durability of efficacy and potential use scenarios?
  - Are we currently able to agree on justifiable cost criteria for gene drive mosquitoes?
  - If questions remain, what more needs to be done?

Moderator: Michael Bonsall
Rapporteurs: Camilla Beech
Karen Tountas

17:00-17:30  Final discussion and next steps

Stephanie James