

**IFOND Board Zoom Meeting minutes: Friday, 3/7/2022 from 9 to 10:40 am Central time.**  
**Members present:** Fred Diehl, Anne Diehl, Valerio Carelli, Rustum Karanjia, Patrick Yu-Wai Man, Alfredo Sadun, Michael Moriarty, and Margaret Wong-Riley

1. **Welcome:** Fred welcomed everyone and thanked Rustum for organizing the meeting.
2. **Financial report by Fred:**
  - Our End-of-Year (EOY) 2021 (Dec 31, 2021) accounts are as follows
    - The Sterling Bank (as of February, 2022, this bank was absorbed by Webster Bank) operating account for **EOY 2021 is \$ 6,121.83**. This is after the payment of:
      - \$10k to complete our committed funding to Cambridge University c/o Patrick's pre-approved grant (now the 25k committed in 2020 is paid in full).
      - \$95 to American Express for the annual fee.
    - New York Life Investment: divided in 4 various types of bond funds had a 2021 EOY total balance of **\$ 85,722.19**.
      - Note: on 12-6-21, we moved \$10k from this account to the Sterling Bank (operating account) to pay Cambridge U. noted above.
    - We will be filing our 2021 tax report with our accounting firm Rifkin and Co., Bardonia, NY, likely by the end of this month.
  - Almost no administrative expenditure other than P.O. Box, Directors and officers insurance, tax preparation and filing (by Rifkin and Co.), and miscellaneous equipment like new fax/answering machine, etc.
  - Complete grant payment of \$3,900 to Rustum.
3. **RDMM (Rare Disease Models and Mechanisms Network):** Brief report by Rustum:
  - RDMM in Canada has a program for co-funding grants: RDMM will fund \$12,500 if the co-sponsor (e.g., IFOND) will have a matching fund of \$12,500 Canadian (roughly US \$10K), making a total of \$25K (Canadian) earmarked for researchers in Canada only. The full proposal is due sometime in the Spring. Once they have vetted the applications, they will forward them to IFOND. The Board can then make comments. The focus will be mainly on animal models of LHON. Rustum intends to apply.
  - Fred wondered if RDMM in Europe (and Japan) would help Valerio, Chiara and Patrick. They can look into that.
4. **Fund Raising:**
  - IFOND received a \$1k check from the EINHORN Family Foundation and \$1k from the Laure R. Gibson Jr. Family Trust.
  - We are anticipating \$5.2 k to fulfill pledges made to Fred's brother Donald's Facebook Challenge. Nothing has been received from Facebook as yet.
  - Facebook Challenge also resulted in \$750 in checks being sent directly to IFOND by a few individual donors responding to this Challenge.
  - Golf Outing this year is uncertain, as is the Manhattan Boat Trip Fund Raisers.
  - Board members raised the possibility that, as IFOND's website has a link for donation, each active researcher on the Board can update his/her research findings to be posted on the web so that donors can donate to specific projects, if they so choose. Donors can also specify if the gift is in memory of a specific individual or individuals. A modification to the IFOND website is needed.
5. **Research reports of scientific board members:**
  - **Alfredo:** Two parallel approaches to studying LHON:
    - Computational chemistry of the G3460A mutation of ND1 (the most severe form of LHON): to determine the structure of the normal and mutated ND1, and how this mutation affects the transfer of electrons from ND1 to ubiquinone. They found that the substitution of amino acids alanine to threonine at position 52 "leads to an additional -OH right in the path of the moving

- ubiquinol”. Consequently, it “creates electrostatic forces that ultimately block movement of ubiquinol and generates ROS” (reactive oxygen species), which are detrimental to “retinal ganglion cells, their fibers in the optic nerve and ultimately cause blindness in LHON” (quotations are from Alfredo’s working manuscript). (*See also Alfredo’s Progress Report*)
- Using cybrids from Valerio and UCLA, they found that the rate of mutation of ND1 changes with temperature. The conversion of alanine to threonine at position 52 may be associated with electrostatic attraction and electron tunneling, requiring extra energy to overcome it.
  - **Valerio:**
    - He will be organizing an International meeting in Bologna in June of 2023 on mitochondrial diseases. He said that it may be good to have a LHON meeting attached to it. Fred indicated that IFOND may consider raising funds to support the LHON meeting. He asked if Valerio and Chiara can submit written outlines of their current research activities to the Board for consideration.
    - His paper on mitophagy (which utilized electron microscopy in Los Angeles) submitted to Cell Reports is undergoing a second round of revision, which requires 6 months to do the experiments. When complete, he will share the paper with the Board.
    - He is undertaking whole genome sequencing of 20 Brazilian family members: both affected individuals and unaffected carriers.
  - **Rustum:**
    - He will be submitting a proposal to RDMM for possible co-funding by IFOND as described above.
    - His AI (artificial intelligence) project is finally underway, as Ottawa is getting an OCTA (optical coherence tomography angiography). He will analyze the AI data and determine if those from Canada (his) and UK (Patrick’s) correspond with those from the US and Italy, the latter groups being obtained from trained medical personnel (i.e., not AI). This will help to determine if the model is correct.
  - **Patrick:**
    - Benson Chen, MD, is formally accepted as a PhD student by the University of Cambridge.
    - Benson has developed a patient-reported outcome measure (PROM) questionnaire for patients with inherited optic neuropathies. Stage One has been completed, resulting in a publication and another one in press. Stage Two involves Zoom Pro with about 20 participants with LHON or ADOA (autosomal dominant optic atrophy). The transcribed interviews will be analyzed with a software package (NVivo 12). The final phase will be in a year.
    - Benson is also involved with a project to standardize nomenclature used for LHON. This project was spearheaded by Rustum and Lissa (Poincenot).
    - *Please see Patrick’s Progress Report.*
6. **Possible IFOND-funded meetings:**
- Fred raised the possibility of IFOND funding a 1-2 day meeting in association with established national or international meetings (such as ARVO, NANOS, etc.). The Board can come up with a list of guest speakers. Alfredo mentioned that such has been done in the past in conjunction with ARVO. The 2023 meeting in Italy organized by Valerio will be a good venue, and it would be good to invite Solange from Brazil to speak.
7. **Brazil 2022?**
- Rustum indicated that it will not be feasible to go to Brazil in 2022 due to COVID.
8. The meeting was **adjourned at 10:40 am.**

Respectfully submitted,  
 Margaret Wong-Riley, Ph.D.  
 3/10/2022