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 AWARDEE REPORT FORM

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| NAME | Jeremy B.A. Green |
| TWITTER HANDLE\* *optional* |  |
| UNIVERSITY | King’s College London |
| NAME OF AWARD | Symington Bequest |
| PURPOSE OF AWARD *conference/event attended/organised (full name) with city and dates.* |
| 19th International Xenopus Conference, Cambridge, MD [*sic*], USA.20-24 August, 2023Attended conference, chaired one session, presented platform short talk |
| REPORT: What were your anticipated benefits? |
| 1) Disseminate our results to advance 3Rs (refinement, reduction, replacement) of animals in research2) Keep abreast of developments in Xenopus, a superb model system for developmental and cell biology |
| COMMENTS: Describe your experience at the conference ~~/ lab visit / course / seminar/ event.~~ |
| Xenopus frogs are outstanding models for developmental and cell biology and this was much in evidence when the small but vigorous research community met at the 19th Biennial International Xenopus Conference in Cambridge, Maryland, on the east coast of the USA. The new biology presented ranged from use of Xenopus for anatomical/phenotypic screening of candidate human disease genes and variants (including cancer and autism), via insights into the role of fluid pressure in control of neural development and archenteron collapse, the mechanism of folate prevention of spina bifida (it’s via convesion to retinoic acid), to the metabolic control of tissue regeneration and the molecular regulators of cellular apical constriction. Among the talks, many pointed out the advantages of Xenopus over zebrafish, including not only the smaller and simpler genome and faster breeding time of Xenopus tropicalis, but also highly efficient F0 gene knockout using CRISPR, including even unilateral gene knockout where half the animal is mutant and the other a wild-type contralateral control! My Symington Bequest-funded attendance was to present the results of our testing of a protocol to double the egg-laying productivity of Xenopus females. We found that current protocols massively under-use the egg-laying capacity of Xenopus laevis and that doubling the number of hormone-stimulated egg-laying days produces only a modest, transient increase in strain (as measured by corticosterone secretion) after the second of two closely-spaced ovulations while doubling the egg-laying days and having no effect on egg number or quality on each day or overall animal health. The reception to this work was, understandably, strongly positive as it offers a potential to double output or halve animal costs for researchers using Xenopus laevis. |
| REPORT: In relation to skills, what were the most important things you gained? *(does not apply to equipment grant.* For public engagement/outreach awards what did your audience gain and how did you evaluate success? |
| Renewed enthusiasm for the use of Xenopus in research, being reminded of how anatomically and developmentally it is such a good model and how technical advances in transgenesis and gene knockout and several omic databases continue to keep it at the forefront of biological discovery.The opportunity to promote the 3Rs by presenting our findings on an improved husbandry protocol. |
| REPORT: How do you think you will put this learning experience into practice in the future? For public engagement/outreach awards how with the materials/knowledge generated by this activity be used in the future? |
| I will continue to apply for funding to renew my Xenopus research programme, focusing on morphogenesis and the cellular basis of tissue shaping. I will also finish writing up and submitting our project on improved husbandry of Xenopus laevis. |
| Data Protection/GDPR: I consent to the data included in this submission being collected, processed and stored by the Anatomical Society. Answer YES or NO in the Box below |
| YES |
| Graphical Images: If you include graphical images you must obtain consent from people appearing in any photos and confirm that you have consent. A consent statement from you must accompany each report if relevant. A short narrative should accompany the image. Answer N/A not applicable, YES or NO in the box below |
| NO |
| Copyright: If you submit images you must either own the copyright to the image or have gained the explicit permission of the copyright holder for the image to be submitted as part of the report for upload to the Society’s website, Newsletter, social media and so forth. A copyright statement must accompany each report if relevant. Answer N/A not applicable, YES or NO in the box below |
| N/A |
| SIGNATURE | J. GREEN | DATE | 12 September 2023 |

*If submitted electronically, a type-written name is acceptable in place of a hand-written signature*

*File: AS-Award-Report-Form-220922 – International Conference*