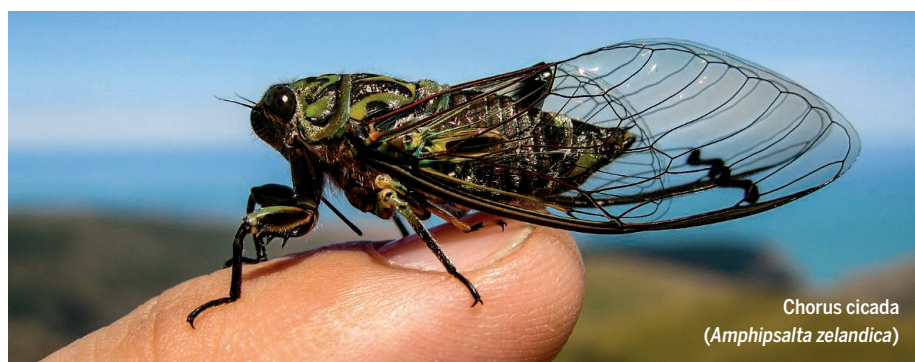


that are surmountable with inspired and motivated input. Quality mentorship is vital for trainees and junior scientists to achieve career goals (1–3) and is perhaps more critical for D/HH scientists who intrinsically face communication challenges (4).

The unique experiences, skills, and expertise of each D/HH scientist in our community empower the model and have advanced scientific understanding across the wider biomedical community. Most of us meet in person at the annual meeting of the ARO (as well as other professional conferences), where our network has secured equal access to podium and poster sessions through sign language interpreters, hearing-assistive technology, and real-time captioning. The efficacy of our distributed model of peer support, mentorship, and integration with the wider scientific community is validated in

part by those members of HI-ARO who have become academic faculty (4–6), secured competitively funded national research awards, and published influential manuscripts in high-impact journals [e.g., (7–10)].

Given the demonstrated success of this distributed model of mentorship, we believe that federal and philanthropic efforts to increase diversity should not be limited to a proposed hub model in a single geographic area that focuses primarily on trainees. An alternative approach is to scale up our distributed model of mentoring D/HH pre- and postdoctoral trainees, with a particular focus on junior faculty competing for research awards who will serve as the next generation of mentors. The distributed model will continue to raise awareness of the societal cost of hearing loss and energize the trajectories of D/HH scientists globally.



Chorus cicada  
(*Amphipsalta zelandica*)

## OUTSIDE THE TOWER

# Nature's treasure hunt

Late March is the end of the cicada season in New Zealand. But the summer has been unusually wet in Auckland, and the insects' constant singing is still going strong in Henderson Park, where a larger-than-usual crowd of visitors has gathered for the 2017 edition of Bioblitz. The goal of this event is to inventory all living things on a site within a 24-hour window. Participants go on a treasure hunt for plants, animals, and fungi, then bring specimens to an army of volunteer scientists who provide taxonomic identification as well as anecdotal scientific background about the collected organisms. Parents and children alike are looking high and low for critters. One of the big hits this year is cicadas and the empty skins that they leave behind when they transform into flying adults. Visitors at my soil fauna stall gasp with surprise as I show them a live cicada nymph: "So this is what they look like! I have only ever seen empty cases!" Their amazement grows as I explain that to find living nymphs, they would have to dig—the juveniles live underground and only come out when it is time to metamorphose. A more daring kid lets the insect nymph crawl in her hands and giggles when the unsettled creature pinches her skin. Later, the same child returns, dragging her dad to my stall, determined to teach him the life cycle of cicadas. A Bioblitz exposes the public to otherwise unnoticed biodiversity and has the potential to develop a sense of awe for a natural world that is increasingly removed from people's daily urban life. As I watch this little girl teaching her dad about the wonders of nature, I feel we may finally have the upper hand in the battle to conserve biodiversity.

### Stéphane Boyer

Department of Environmental and Animal Sciences, Unitec Institute of Technology, Auckland, 1142, New Zealand and Bio-Protection Research Centre, Lincoln University, Christchurch, 7647, New Zealand. Email: sboyer@unitec.ac.nz

10.1126/science.aan3452

The distributed and hub models are not mutually exclusive and an open dialogue to investigate their synergistic alignment may be highly beneficial.

**Henry J. Adler,<sup>1\*</sup> Kelsey L. Anbuhl,<sup>2</sup> Samuel R. Atcherson,<sup>3</sup> Nathan Barlow,<sup>4</sup> Marc A. Brennan,<sup>5</sup> John V. Brigande,<sup>6</sup> Brad N. Buran,<sup>6</sup> Juergen-Theodor Fraenzer,<sup>7</sup> Jonathan E. Gale,<sup>8</sup> Frederick J. Gallun,<sup>6,9</sup> Sarah D. Gluck,<sup>10</sup> Ray L. Goldsworthy,<sup>11</sup> Joseph Heng,<sup>12</sup> Ariel Edward Hight,<sup>10</sup> Julia J. Huyck,<sup>13</sup> Barry D. Jacobson,<sup>14</sup> Takatoshi Karasawa,<sup>15</sup> Damir Kovačić,<sup>16</sup> Stacey R. Lim,<sup>17</sup> Alexander K. Malone,<sup>18</sup> Lisa S. Nolan,<sup>8</sup> Dominic V. Pisano,<sup>19</sup> Valluri R. M. Rao,<sup>20</sup> Robert M. Raphael,<sup>21</sup> J. Tilak Ratnanather,<sup>22</sup> Lina A. J. Reiss,<sup>6</sup> Chad V. Ruffin,<sup>23</sup> Adam T. Schwalje,<sup>24</sup> Moaz Sinan,<sup>25</sup> Patricia Stahn,<sup>26</sup> Peter S. Steyger,<sup>6</sup> Stephen J. Tang,<sup>27</sup> Viral D. Tejani,<sup>24</sup> Victor Wong<sup>28</sup>**

<sup>1</sup>Center for Hearing and Deafness, University at Buffalo, Buffalo, NY 14214, USA. <sup>2</sup>University of Colorado School of Medicine, Aurora, CO 80045, USA. <sup>3</sup>University of Arkansas at Little Rock, Little Rock, AR 72204, USA. <sup>4</sup>University of Auckland, Auckland 1072, New Zealand. <sup>5</sup>Boys Town National Research Hospital, Boys Town, NE 68010, USA. <sup>6</sup>Oregon Health & Science University, Portland, OR 97239, USA. <sup>7</sup>Max Rubner-Institut, 95326 Kulmbach, Germany. <sup>8</sup>University College London Ear Institute, London, WC1X 8EE, UK. <sup>9</sup>U.S. Department of Veterans Affairs, Portland, OR 97239, USA. <sup>10</sup>Harvard University, Cambridge, MA 02138, USA. <sup>11</sup>University of Southern California, Los Angeles, CA 90007, USA. <sup>12</sup>Johns Hopkins Hospital, Baltimore, MD 21287, USA. <sup>13</sup>Kent State University, Kent, OH 44240, USA. <sup>14</sup>Massachusetts Institute of Technology, Cambridge, MA 02139, USA. <sup>15</sup>Kyorin Pharmaceutical Co., Ltd., Tochigi 329-0114, Japan. <sup>16</sup>University of Split, 21000 Split, Croatia. <sup>17</sup>Central Michigan University, Mt. Pleasant, MI 48859, USA. <sup>18</sup>University of South Florida, Tampa, FL 33620, USA. <sup>19</sup>University of Michigan School of Medicine, Ann Arbor, MI 48103, USA. <sup>20</sup>Saratoga, CA 95070, USA. <sup>21</sup>Rice University, Houston, TX 77005, USA. <sup>22</sup>Johns Hopkins University, Baltimore, MD 21218, USA. <sup>23</sup>Indiana University School of Medicine, Indianapolis, IN 46202, USA. <sup>24</sup>University of Iowa Hospitals and Clinics, Iowa City, IA 52242, USA. <sup>25</sup>Wayne State University School of Medicine, Detroit, MI 48201, USA. <sup>26</sup>Saarland University Faculty of Medicine, D-66421 Homburg, Germany. <sup>27</sup>University of Wisconsin Hospital and Clinics, Madison, WI 53792, USA. <sup>28</sup>Burke Medical Research Institute, White Plains, NY 10605, USA.

\*Corresponding author. Email: henryadl@buffalo.edu

## REFERENCES

1. S. L. Clark, C. Dyar, N. Maung, B. London, *CBE-Life Sci. Educ.* **15**, ar45 (2016).
2. C. L. Murdaugh, *J. Cardiovasc. Nurs.* **12**, 65 (1998).
3. H. A. Valentine, P. K. Lund, A. E. Gammie, *CBE-Life Sci. Educ.* **15**, fe4 (2016).
4. N. Ansbome, *Science Careers* (2007); [www.sciencemag.org/careers/2007/03/deaf-needs-hearing-impaired-scientists](http://www.sciencemag.org/careers/2007/03/deaf-needs-hearing-impaired-scientists).
5. K. Yandell, *The Scientist* **29**, 26 (2015).
6. L. Terry, *The Oregonian* (2016); [www.oregonlive.com/health/index.ssf/2016/11/ohsus\\_deaf\\_hearing\\_researchers.html](http://www.oregonlive.com/health/index.ssf/2016/11/ohsus_deaf_hearing_researchers.html).
7. J. W. Koo *et al.*, *Sci. Transl. Med.* **7**, 298ra118 (2015).
8. S. P. Gubbels, D. W. Woessner, J. C. Mitchell, A. J. Ricci, J. V. Brigande, *Nature* **455**, 537 (2008).
9. L. A. Reiss, J. L. Eggleston, E. P. Walker, Y. Oh, *J. Assoc. Res. Otolaryngol.* **17**, 341 (2016).
10. M. A. Brennan, R. W. McCreery, W. Jesteadt, *J. Acoust. Soc. Am.* **138**, 2589 (2015).

10.1126/science.aan2330