

EXECUTIVE SUMMARY

A retrospective five-year (2012-2017) review of the National Program (NP)-104 of the United State Department of Agriculture – Agricultural Research Service (USDA-ARS) was performed by a panel of four subject experts. The panel reviewed over 200 pages of documents and participated in an interactive webinar conducted by Dr. Ulrich Bernier, Director of NP-104. This report covers a comprehensive review of the entire NP-104 program, not individual projects.

It is a unanimous consensus of the panel members that overall NP-104 has met or exceeded its goals and objectives through excellent research and good collaboration on a worldwide basis, with reasonable funding. Out of the 68 projects, 66 have either met or surpassed their goals and objectives. The other two projects could not be completed due to scientists leaving the ARS in the middle of the projects. During the report period, the NP-104 researchers have secured 23 patents, published 562 peer reviewed publications, procured 20 Cooperative Research and Development Agreements, and 161 Material Transfer Research Agreements. Moreover, the researchers have obtained \$26.8 million funding over 125 grants from 37 different sources ranging from pharmaceutical companies to local and federal governments and universities. These accomplishments are indicative of their collaborations and networking with over 31 entities consisting of universities, public health agencies and private enterprises.

Additionally, the researchers have mentored nearly 300 post-doctoral fellows, graduate and undergraduate students and hosted 47 visiting scientists. The scientists were also well represented in professional organizations, associations, and many of them served on committees and boards. A good number of the scientists received awards for serving as officers on the boards of their professional associations.

The panel also noticed that research on ticks needs to be augmented beyond the cattle tick research. Recognizing the scope of Lyme disease prevalence, it is importance that additional funding be appropriated to NP-104 to conduct research on ticks and tick-borne pathogens of medical and veterinary importance. The panel also noted that due to an increase in tourism and international commerce facilitated by the jet age, the threat of introduction of new vectors and vector-borne pathogens is more eminent than ever before. Therefore, the NP-104 program shall

be provided additional funds to protect the U.S. citizens and livestock industry from the ravages of invasive vectors and vector-borne pathogens.

Finally, the panel highly applauds Dr. Bernier for his in-depth knowledge and strong leadership he has demonstrated during his short tenure as Program Director.