6775 Chardonnay Rd.
Paso Robles, CA 93446
www.projectapism.org

Request for Proposal (RFP) – Healthy Hives 2020
Seeking Solutions for Sustainable Beekeeping

7 November 2016

Background

Total honey bee colony losses in the United States were reported at 44.1% during 2015-2016 (beeinformed.org). The results from this survey represent more than 5,700 beekeepers from 48 states. Colony losses are attributed to pathogens, parasites, pesticides, hive management (queen mating, genetics, maintenance), climate, and a reduction of nutrition availability. Sustainable beekeeping is dependent on maximizing outputs (colony health, colony numbers, honey production, profitability) while minimizing the inputs (time, money, personnel). A sustainable beekeeping industry would contribute to a more sustainable agricultural landscape through a stable supply of bees for crop pollination. In an effort to reduce colony losses nationwide by the year 2020, we are requesting research proposals that provide practical and tangible solutions to the beekeeping industry.

The funding sponsor for these proposals is the Healthy Hives 2020 initiative (HH2020), with Project Apis m. (PAm) administering the proposal, accountability and funding process. HH2020 is an initiative of the Bayer Crop Science Bee Care Program with the goal of improving the health of honey bee colonies in the United States by the year 2020. In June 2015, BCS kicked-off HH2020 with a two-day multi-stakeholder workshop to discuss current status of bee health and identify key areas for research. This RPF marks the second round of solicitation for HH2020 funding. Projects funded in year 1 are summarized here. The research priorities for funding and interim reports will be reviewed by a steering committee (SC) consisting of representatives from multiple sectors (i.e. beekeeping, academia, industry, and government) who represent a diversity of backgrounds and experiences. The SC and PAm will review all submitted proposals and determine funding decisions. The SC may elect to distribute proposals for *ad hoc* expert reviews if deemed to be necessary.

Priority Areas for Funding

Collaborative research partnerships with U.S. commercial beekeeping operations will be prioritized for funding in the following areas:

1. **Conduct an economic evaluation of apicultural practices including inputs and outputs (as described above) to quantify the true "cost" of beekeeping.** Collaborate with commercial beekeeping operations with the aim of maximizing beekeeping efficiency and production while minimizing expenses.

2. **Compare and contrast current Best Management Practices (BMPs) designed to understand how different management techniques (i.e., antibiotic treatments, *Varroa* monitoring and treatment, other management practices) contribute to overall colony success.** Define BMPs for commercial beekeeping grounded upon definitive colony health performance data and characterize whether BMPs for industry health vs colony health are complementary or inharmonious.

3. **Evaluate the use of "smart hive" technology to monitor commercial migratory operations.** Determine whether the use of apiary and hive remote monitoring technology (including environmental conditions, hive weight, hive temperature, foraging activity) can improve migratory operational success where travel is often necessary to sufficiently monitor colony health.

4. **Evaluate available US genetic lines of bees for traits related to colony health (disease/ pest resistance) and productivity (pollination and honey production).** Characterize imported germplasm and current US honey bee stocks for a suite of known traits relevant to colony health and productivity (overwintering survival, *Varroa* tolerance, queen performance, disease resistance, pollination efficiency under various weather conditions, productivity and vigor, other apicultural characteristics).

Proposals should address one or more of the above priority areas, but other research projects may be considered. Clearly outline within the proposals how the research goal and objectives directly contribute to providing tangible solutions for the improvement of honey bee colony health in the US by the year 2020. Proposals should include proposed timelines, deliverables and itemized budget, at least one letter of support, and a description of the qualifications for the researchers listed in the proposal. Proposals may request up to two years of funding. The expected amount of available funding is expected to be $200,000. Progress reports will be required and reviewed by the Steering Committee. The continuation of funding is contingent upon progress toward achieving project goals.

Proposals should be submitted via email to both danielle@projectapism.org and jean@projectapism.org by **5 pm PST, Friday, December 9nd, 2016**.

In addition to the above descriptions for the priority areas, please follow these proposal guidelines:

1. Title and Principal Investigator – Clearly state the title and principal investigator (PI) of your proposal. Provide the PI's title, address, email address and telephone number. List cooperating investigators with their names and email addresses. Cooperating investigators must be aware of this proposal. If cooperating investigators are contacted by PAm and are unaware that their names have been added to the proposal, the proposal will not be submitted for consideration.

2. Date and Duration of Proposed Study – Provide the date of the proposal submission and the anticipated duration of the study.

3. Problem and Significance – To provide a background to the proposed study, state the problem the study addresses and its significance to managed honey bee colonies and/ or pollinated crops. If this is a continuation of a previous PAm project, please state the title and funding provided in the previously funded project, the outcome of the previously funded project and justification for continuing research.

4. Objectives – State the project objectives.

5. Materials and Methods – Provide your experimental design, by objective if necessary.

6. Intended Outcome – Give a brief statement of the intended outcome of the project. This would be a general statement that could be used in a press release or to better describe your project on PAm's website. This statement most likely blends the objectives into a concise summary of the project while providing the bottom-line justification for why PAm should fund your project.

7. Economic Feasibility for New Products - If the study involves new product development, it is important to provide an economic evaluation of the new product. This would include projected cost of the final product. Justification for the projected cost and cost-effectiveness will be a prime consideration in evaluating the proposal.

8. Project Timeline – The proposed project timeline should be May 1, 2017 through April 30, 2018 (1-year project duration) or April 30, 2019 (2-year project duration).

9. References – Provide pertinent literature citations. Provide at least one letter of support.

10. Budget Request – Include a) salaries and benefits, b) supplies, c) equipment, and d) travel. If applicable, list other entities funding this research and the amount they are contributing. If this proposal is being submitted for consideration by other organizations, please list the organization and the amount requested. Our policy is consistent with California commodity groups; we do n o t pay overhead or indirect costs.

Approval and Funding

PAm will notify the PI shortly after approval by the Healthy Hives 2020 Steering Committee. We anticipate approval by February 3, 2017. Unless other terms are stated, 50% of the requested funding will be provided at the commencement of the study, with the remaining 50% disbursed upon receipt of the Final Report.

Expectations

PAm and the HH2020 assume projects will be executed as stated in the Proposal, specifically with reference to the defined objectives, timeline, and budget. Successful applicants will sign an Agreement with PAm. Interim and annual reports will be provided to PAm, which will then be forwarded to HH2020 and Bayer Crop Science. Results will be discussed and shared in a Bayer-hosted webinar with the HH2020 Steering Committee. Bayer and the HH2020 Steering Committee reserve the right to review and comment on publications arising from the sponsored project.

Questions?

Contact Jean@projectapism.org with *brief* questions concerning submission of proposals to Project Apis m.