Context Statement
David Crowder, Assistant Professor, Department of Entomology

I came to the Washington State University (WSU) Department of Entomology in May 2009 as a postdoctoral research associate in the lab of Bill Snyder. My research focused on interactions between Colorado potato beetle pests, insect predators, and entomopathogenic (“insect-killing”) nematodes. Specifically, I investigated how biodiversity of natural enemies was impacted by climate change, and how variation in natural enemy biodiversity affected pest control. In 2011 I was awarded a 2-yr postdoctoral fellowship from the USDA for this research. While I greatly enjoyed my position, I did not expect to stay at WSU once my funding ran out and I began actively applying for faculty positions. In early 2012 the Department of Entomology began a search for a faculty member studying plant-insect interactions. I decided to apply because I had grown to love Pullman and felt my research program was appropriate for the job description. I was fortunate the be offered the position and began as a faculty member in the Fall of 2012.

As I had previously been a postdoc at WSU, I knew that to succeed as a faculty member I would have to develop an innovative research program that complemented other programs in our unit. I was also keenly aware that I would be evaluated based on my ability to develop a program that was independent from my postdoc advisor. In turn, over the past 5 years I dedicated myself to the goal of creating a research and teaching program that is self-sufficient and unique, but which also complemented existing strengths in our department and at WSU more broadly. I achieved this goal by developing research questions in systems that were not addressed by our faculty, but which have major importance to the state of Washington. These included studies in wheat and legumes, and during this period I established relationships with the Grain Commission and the Dry Pea and Lentil Commission. In 2013 I was awarded a two-year “Distinguished Wheat Professorship” and began to serve on the Small Grains Extension team at WSU. In addition to working in these systems, my students and postdocs developed research questions in canola crops, quinoa, and on diversified organic vegetable farms of Western Washington. Through these efforts I have created a diversified program that is distinct within our department, while complementing departmental strengths in pest management and applied research.

My research program at WSU has evolved greatly over the past five years. I have worked hard to create a diverse program that explores questions across a variety of systems. This diversity has allowed us to be resilient to changing funding conditions while allowing us to opportunistically pursue novel research opportunities that emerge. For example, one of the primary focuses of my lab is to study plant pathogens vectored by insects in legume, wheat, and potato cropping systems. In particular, we investigate interactions between vectors, non-vector herbivores, viruses, and plants. This research involves chemical ecology and plant-insect interactions, and complements other research in my department and WSU more broadly on vector-borne pathogens of animals. My work on plant pathogens has led to collaborations with faculty within our department in addition to faculty in Plant Pathology, Crop and Soil Sciences, and the School for Global Animal Health, and I hope to continue to foster this area of research moving forward. For example, I was the PI of a grant to the National Institute of Mathematical and Biological Synthesis (NimBIOS) that established a working group on plant diseases. This working group brought together leaders from around the world on plant diseases for a series of workshops, and helped establish my lab as a leader in this field.
My laboratory has also begun to study interactions between native bee pollinators and crop plants in diversified organic systems. I am the PI of a USDA grant focused on novel research on factors that affect mutualistic plant-pollinator networks and exploring how community structure influences plant-pollinator relationships. This research also provides a natural complement to research on honey bees and alfalfa seed pollinators that is ongoing within my department. Moreover, as pollinators remain a major focus area of USDA, I see this component of my research program to be highly fundable over the next 5-10 years.

In addition to developing an independent research program, I knew it was important to develop a unique teaching program within my department. When I was initially hired, I was told that I would be teaching Integrated Pest Management. However, I was unsatisfied with the current course that was offered, and I worked with Entomology faculty to create a new class, Ecological and Integrated Pest Management, which improved upon our previous course offerings. By developing this new course we also doubled student enrollments, which aided my department by generating enrollment-based funding. I also developed courses in experimental design/statistics and scientific writing, which are required courses of Entomology students but which were previously not taught through our department. My class in scientific writing has been successful, as over 10 students in the past two years alone have received research grants totaling nearly $750K in funding. In these ways I tried to make a unique contribution to the curriculum offered by our department while providing benefits to students and faculty.

Overall, working as a postdoctoral associate at WSU before beginning my faculty position has created unique opportunities and challenges for me. Because I spent three years in Pullman prior to starting my faculty position, I had a good understanding of potential study systems and research questions in Washington and the Pacific Northwest. I also understood the need for new courses to benefit Entomology students. Thus, I feel like I was able to hit the ground running more quickly than a typical faculty member. At the same time, however, I realize that my ability to be independent from my postdoctoral mentor will be evaluated more critically than most new faculty. I feel I have addressed this question by developing a novel program that complements existing department strengths and which will continue to develop over the next 5-10 years. As my laboratory evolves I will continue to seek out research opportunities that contribute in distinct ways to our department, college, and university while establishing my program as a leader in insect community ecology and plant-insect interactions.