BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME	POSITION TITLE
Laura Serbus	Assistant Professor
eRA COMMONS USER NAME (credential, e.g., agency login) lserbus	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	MM/YY	FIELD OF STUDY
Northwestern University, Evanston, IL	BA	06/99	Molecular and Cell Biology
Indiana University, Bloomington, IN	PhD	05/05	Genetics and Molecular Biology
University of California, Santa Cruz, CA	postdoc	05/13	Molecular, Cellular and Developmental Biology

Please refer to the application instructions in order to complete sections A, B, C, and D of the Biographical Sketch.

A. Personal Statement

My research project at FIU focuses on *Wolbachia pipientis,* a bacterial endosymbiont that is carried by approximately 40% of insects and some filarial nematodes. This is a rapidly growing area of study, and the last 10-15 years of research have revealed that *Wolbachia* are able to both induce and prevent widespread human disease. *Wolbachia* bacteria are the causative agent of African River Blindness and Lymphatic Filariasis (Elephantiasis), which afflict 146 million people in 78 countries. However, *Wolbachia* are also able to suppress RNA viruses like Dengue Fever and Chikungunya, with the most dense *Wolbachia* infections conferring the strongest antiviral effect. As such, any insight into how *Wolbachia* load can be manipulated has implications for human health. The research of my laboratory, focused on how *Wolbachia* loads are controlled in invertebrates, is well-suited to address this issue. The main focus of my lab is on understanding how host nutrition affects *Wolbachia* density in insects, using confocal microscopy as the main approach. In a second project, we are investigating how the host proteome responds to the presence of *Wolbachia*, using mass spectroscopy. We are also following up on candidate anti-*Wolbachia* drugs, using established chemical libraries. My research group is currently comprised of 5 undergraduates, 1 graduate student, and 1 lab manager, most of whom come from minority groups underrepresented in STEM. This past year was my first as a faculty member at FIU, and assembly of this my research group during that time has resulted in a cohesive, focused team of individuals. This has created the foundation for current and future productivity in my laboratory as well as provided the basis for new, competitive applications for fiscal support of the lab.

B. Positions and Honors

Positions:

1997-1999	Independent study in Dr. William Klein's lab at Northwestern University.
1999-2005	Doctoral project in Dr. William Saxton's lab at Indiana University.
2005-2013	Postdoc in Dr. William Sullivan's lab at the University of California.
2012	Instructor at California State University.
2013	Lecturer at the University of California.
2013-present	Assistant Professor at Florida International University.

Honors:

1999-2002	NIH Training Grant
2007-2008	NIH Ruth L. Kirschstein Postdoctoral Fellowship
2008	Best Oral Presentation award, International *Wolbachia* Conference
2009	Machery-Nagel Supplies Award
2010	NSF Travel Award to attend the International *Wolbachia* Conference
2010-2012	Member, Anti-*Wolbachia* Consortium (Liverpool School of Tropical Medicine, sponsored by the Bill and Melinda Gates Foundation)

C. Publications

1. Brendza RP, **Serbus LR**, Duffy JB, Saxton WM. A function for kinesin I in the posterior transport of *oskar* mRNA and Staufen protein. *Science*. 2000 Sep 22;289(5487):2120-2.
   Highlighted in Faculty of 1000.
2. Cha BJ, **Serbus LR**, Koppetsch BS, Theurkauf WE. Kinesin I-dependent cortical exclusion restricts pole plasm to the oocyte posterior. *Nat Cell Biol*. 2002 Aug;4(8):592-8.
   Highlighted in Faculty of 1000.
3. **Serbus LR**[*], Brendza RP[*], Saxton WM, Duffy JB. Posterior localization of dynein and dorsal-ventral axis formation depend on kinesin in *Drosophila* oocytes. *Curr Biol*. 2002 Sep 3;12:1541-5. [*] Authors contributed equally to this work. Highlighted in Faculty of 1000.
4. **Serbus LR**, Cha BJ, Theurkauf WE, Saxton WM. Dynein and the actin cytoskeleton control kinesin-driven cytoplasmic streaming in *Drosophila* oocytes. *Development*. 2005 Aug;132(16):3743-52.
5. **Serbus LR**, Sullivan W. A Cellular Basis for *Wolbachia* Recruitment to the Host Germline. *PLoS Pathog*. 2007 Dec 14;3(12). Highlighted in Faculty of 1000.
   Feature photo for the issue, and also spotlighted in: Molloy, S. Bacterial pathogenesis: Chain of transmission. *Nat Rev Microbiol*. 2008 Feb 6;93.
6. **Serbus LR**, Casper-Lindley C, Landmann F, Sullivan W. The genetics and cell biology of *Wolbachia*-host interactions. *Ann Rev Genet*. 2008;42:683-707.
7. Moua P, Fullterton D, **Serbus LR**, Saxton WM. The Kinesin-1 heavy chain tail is critical in vivo for saltatory transport of mitochondria and *oskar* mRNA. *Development*. 2011 Mar;138(6):1087-92.
8. **Serbus LR**, Ferreccio A, Zhukova M, McMorris CL, Kiseleva E, Sullivan W. A feedback loop between *Wolbachia* and the *Drosophila gurken* mRNP complex influences *Wolbachia* titer. *Journal of Cell Science*. 2011 Dec 15;124(24):4299-308.
9. **Serbus LR**[*], Landmann F[*], Bray WM, White PM, Ruybal J, Lokey RS, Debec A, Sullivan W. A cell-based screen reveals that the Albendazole metabolite, Albendazole sulfone, targets *Wolbachia*. *PLoS Pathog*. 2012 Sep 20;8(9). [*] Authors contributed equally to this work
   Highlighted in Faculty of 1000.

D. Research support

Current support:

FIU startup fund — Serbus (PI) — Aug 2013 - July 2016
Exploiting regulatory mechanisms that alter the density of intracellular *Wolbachia* bacteria.
Role: PI

Completed support:

F32 GM080192 0A1 — Serbus (PI) — Jan 2007 - Dec 2008
The molecular basis of bacteria-host interactions in Drosophila melanogaster
Role: PI