

# Vector Borne Diseases and Human Health

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## V(A). Planned Program (Summary)

### 1. Name of the Planned Program

Vector Borne Diseases and Human Health

## V(B). Program Knowledge Area(s)

### 1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
721	Insects and Other Pests Affecting Humans	20%		20%	
722	Zoonotic Diseases and Parasites Affecting Humans	80%		80%	
<b>Total</b>		100%		100%	

## V(C). Planned Program (Inputs)

### 1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	1.0	0.0	2.0	0.0
<b>Actual</b>	0.8	0.0	0.9	0.0

### 2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c 54604	1890 Extension	Hatch	Evans-Allen
	0	40046	0
1862 Matching 87771	1890 Matching	1862 Matching	1890 Matching
	0	61858	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

- Use surveillance data accumulated over a dozen years to develop new tools to pinpoint risk, both spatially and seasonally. •
- Use computer models to view disease patterns in Rhode Island and to develop models for disease risk. •
- Determine landscape patterns that present the greatest risk for encountering a tick bite. •
- Formulate landscape plans to reduce the chances of encounters between ticks and people. •
- Create a web-based decision support system. Using this system, people will be able to compile a customized risk index and then follow links that will help them devise short- and long-term disease prevention action plans. •
- Reduce tick abundance community-wide by using USDA-designed 4-posters, which are devices that attract deer with corn dispensed in small amounts. •
- Study the salivary glands of ticks to find compounds from ticks with potential pharmacological value, formulate novel vaccination strategies to prevent tick-transmitted infections, develop biomolecular assays for tick-borne pathogens, elucidate transmission dynamics of pathogens among tick vectors and vertebrate hosts, and discover and evaluate natural enemies of ticks.

**2. Brief description of the target audience**

The target audience will be diverse and will represent all Rhode Islanders, especially those at greatest risk of contracting vector borne diseases. This audience will include: Community members, Grassroots agencies, Municipal and State Policy Makers, Home owners, Educational Institutions.

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

**Target for the number of persons (contacts) reached through direct and indirect contact methods**

	<b>Direct Contacts Adults</b>	<b>Indirect Contacts Adults</b>	<b>Direct Contacts Youth</b>	<b>Indirect Contacts Youth</b>
<b>Year</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>
<b>Plan</b>	100	10000	100	5000
2007	500	40000	200	0

**2. Number of Patent Applications Submitted (Standard Research Output)**

**Patent Applications Submitted**

<b>Year</b>	<b>Target</b>
<b>Plan:</b>	0
2007:	0

**Patents listed**

2006 U.S. Patent (no. 7,153,947)/European Patent (pending). Ribeiro, J.M.C., J.G. Valenzuela, R. Charlab, T.N.Mather. Ixodes salivary anticomplement protein.

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

	<b>Extension</b>	<b>Research</b>	<b>Total</b>
<b>Plan</b>			
2007	0	5	5

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

Peer reviewed publications

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	3	5

**Output #2**

**Output Measure**

Books and monographs

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	0	0

**Output #3**

**Output Measure**

Abstracts

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	4	5

**Output #4**

**Output Measure**

Conference proceedings

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	1	0

**Output #5**

**Output Measure**

Workshops

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	10	16

**Output #6**

**Output Measure**

Website development and refinement

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	1	1

**Output #7**

**Output Measure**

Public presentations

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	3	20

**Output #8**

**Output Measure**

Public service announcements

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	2	0

**Output #9**

**Output Measure**

Student training

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	2	3

**Output #10**

**Output Measure**

M.S. theses and Ph.D. dissertations

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	1	0

**V(G). State Defined Outcomes**

<b>O No.</b>	<b>Outcome Name</b>
1	Identify areas of high risk for vector borne diseases in Rhode Island
2	Create tick surveillance database
3	Create web-based decision support system to reduce risk to vector borne diseases.
4	Reduce tick abundance community-wide
5	Characterize the salivary glands of ticks to identify compounds of potential pharmacological value
6	Formulate novel vaccination strategies to prevent tick-transmitted diseases
7	Elucidate transmission dynamics of pathogens among tick vectors
8	Increase research funding

**Outcome #1**

**1. Outcome Measures**

*Not reporting on this Outcome for this Annual Report*

**2. Associated Institution Types**

**3a. Outcome Type:**

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
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**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
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**V(H). Planned Program (External Factors)**

**External factors which affected outcomes**

Natural Disasters (drought, weather extremes, etc.)

Appropriations changes

Populations changes (immigration, new cultural groupings, etc.)

Other (Human behavior)

**Brief Explanation**

{No Data Entered}

**V(I). Planned Program (Evaluation Studies and Data Collection)**

**1. Evaluation Studies Planned**

After Only (post program)

Before-After (before and after program)

During (during program)

Comparison between locales where the program operates and sites without program intervention

**Evaluation Results**

{No Data Entered}

**Key Items of Evaluation**

{No Data Entered}