Montana State University scientists are using DNA sequencing technology to analyze the bacteria inside mosquitoes, fleas, and ticks, hoping to gain a new understanding of how the bacteria living inside these insects impacts their ability to spread disease. The researchers are analyzing large amounts of bacterial DNA, looking for a correlation between a disease that is prevalent in one area and the bacteria that are present in the insects from that area. Across the globe, factors such as travel, trade, urbanization, and climate change are altering disease transmission patterns, with infectious diseases such as dengue and chikungunya emerging in countries where they were previously unknown. The scientists’ research could lead to new insights to combat these and other insect-borne diseases.

Montana's top global health R&D institutions by USG funding*

<table>
<thead>
<tr>
<th>ORGANIZATION</th>
<th>FUNDING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Montana State University in Bozeman</td>
<td>$1.1 million</td>
</tr>
<tr>
<td>University of Montana</td>
<td>$115 thousand</td>
</tr>
</tbody>
</table>

Global health R&D at work in the Treasure State

Montana's top areas of global health R&D by USG funding*

- **Salmonella infections**: 44.9%
- **Ebola/VHFs**: 9.5%
- **Rheumatic fever**: 9.3%
- **NTDs**: 9.2%
- **Other**: 27.2%

Neglected diseases in Montana†

- HIV diagnoses: 188
- West Nile cases: 69
- Tuberculosis cases: 61
- Dengue cases: 19
- Malaria cases: 15

Montana's top global health R&D institutions by USG funding*

- Corixa: Hamilton
- GSK: Hamilton
- Microbion Corporation: Bozeman
- Prolimiad: Alberton

Global health R&D is a smart investment for the United States §

- 89¢ of every dollar
- the USG invests in global health R&D stays within the United States, supporting the domestic economy.

USG investment in global health R&D between 2007 and 2015 generated an estimated:

- 200K new US jobs
- $33 BILLION in US economic growth.

*Authors’ analysis of USG investment data from the G-FINDER survey, including funding for R&D for neglected diseases from 2007–2015 and for Ebola and select viral hemorrhagic fevers from 2014–2015. Reflects USG funding received by entities in state including academic and research institutions, product development partnerships, other nonprofits, select corporations, and government research institutions, as well as self-funding or other federal agency transfers received by federal agencies located in state; but excludes pharmaceutical industry data which is aggregated and anonymized in the survey for confidentiality purposes. See www.ghtcoalition.org for full methodology.
† Based on previous analysis of the economic impact of National Institutes of Health R&D funding and author’s analysis described above. See www.ghtcoalition.org for additional details.
¶ NTD: neglected tropical disease. NTDs include Buruli ulcer, Dengue, Helminthes, Kinetoplastids, Leprosy, Trachoma, and Leptospirosis.