Opportunities for Veterinarians

- **International Agencies:** FAO, WHO, World Bank
- **National Development Agencies:** USAID, CIDA
- **NGO’s, Volunteer, Missionary:** Heifer Project Int’l, Peace Corps, VOCA, CVM, OxFam
- **Corporate:** Pharmaceuticals, Winrock, Consultants
- **Regulatory:** USDA APHIS/FSIS, FDA, US Army
- **Academics and Research:** ILRI, USDA, SVM Faculty
Globalization in Veterinary Medicine

• Food Security - Malthusian Theory and Conflict
• The ‘Livestock Revolution’ and Affluence
• Free Trade and the WTO - the ‘Political Diseases’
• Animal Welfare and Sustainable Agriculture
• Multinational Corporations and Pharmaceuticals
• Emerging Disease, Bioterrorism and ‘The Coming Plague’
Global Food Security


Ester Boserup. 1967. ‘The conditions of agricultural growth: The economics of agrarian change under population pressure’ ...population stimulates agricultural production’

Julian Simon. 1981. ‘The Ultimate Resource’ ....the most productive resource in the world is the human mind..... additional persons, in fact, produce more than they consume.
International Food Policy Research Institute: Appraisal of Past Projections and Predictions

- 30 quantitative estimates of world food security in last 50 years
- Two types: World trade models and Trend projections. ‘FAO and USDA underestimate both production and consumption’
- Need for ‘what if’ forecasts based on possible scenarios (eg IFPRI ‘IMPACT’ model)
- Models alert policy makers to major issues looming on the Horizon
- Per Pinstrup-Andersen: ‘global food supplies are sufficient to meet nutritional requirements….if distributed according to need……A Global Food System is needed.’
The Livestock Revolution

• Demand for Food of Animal Origin fueled by population growth, urbanization and income growth in Developing Countries

• Meat and milk consumption to increase 2.9%/yr to 2020 when developing countries produce 63% of meat and 50% of milk

• Most livestock products produced locally, but net increase of meat, milk from developed countries and larger increase in cereal grains for feed, but not major difference in world cost of grain

• Non-ruminant production will increase more than ruminant

• Environmental, public health effects in peri-urban areas

• Rural poor get larger proportional benefit to income from livestock than do rural middle-wealthy classes

• Ensuring that poor benefit from the Livestock Revolution
## Consumption of Meat and Milk

<table>
<thead>
<tr>
<th>Region</th>
<th>Meat (mmt)</th>
<th>Milk (mmt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>16</td>
<td>53</td>
</tr>
<tr>
<td>India</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Latin America</td>
<td>15</td>
<td>26</td>
</tr>
<tr>
<td>Developing</td>
<td>50</td>
<td>111</td>
</tr>
<tr>
<td>Developed</td>
<td>88</td>
<td>98</td>
</tr>
</tbody>
</table>
## Net Exports (Imports) in 2020 to Developing Countries

<table>
<thead>
<tr>
<th>Year</th>
<th>Beef</th>
<th>Pork</th>
<th>Poultry</th>
<th>Milk</th>
<th>Cereals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>-0.52</td>
<td>-0.01</td>
<td>-0.70</td>
<td>-20.01</td>
<td>-104.1</td>
</tr>
<tr>
<td>2020</td>
<td>-1.15</td>
<td>-1.40</td>
<td>-3.16</td>
<td>-33.70</td>
<td>-202.1</td>
</tr>
</tbody>
</table>
Livestock Revolution and the Poor

The International Livestock Research Institute’s Four Pillars

1. Link producers to markets via formal trading and processing institutions = Vertical Integration
2. Credit availability to poor farmers
3. Governments must invest in livestock sector including research, extension, veterinary and artificial insemination services
4. Regulatory institutions must deal with environmental and public health issues of the Livestock Revolution
The Productivity Challenge

• The Green Revolution was driven by top-down technology, the Livestock Revolution is demand driven.

• The two most promising technological pathways to increased productivity for poor producers are improving Quality/Quantity of feed and controlling animal disease.

• ILRI is shifting from basic research (Trypanosomiasis, East Coast Fever) to products such as decision support systems (GIS), vaccines (Rinderpest), ‘orphan diseases’ and diagnostic kits with more immediate benefit.
Office of International Programs

- International Study Electives for Veterinary Students
- Facilitate Faculty International Activities and Research
- Information, Public Releases, WWW site
- International/Tropical Veterinary Medicine Program
LSU/SVM Elective Studies

• VMED 5010 (1 Cr)  
Veterinary Medicine and International Development: Overview, Write a ‘Dream Project’ proposal for Funding

• VMED 5010 (Variable)  
Summer Elective Studies

• VMED 5463 (4 Cr)  
Clinical Block Elective Studies
Future Directions and Goals

Program Development and Funding:

• Merck-Merial Summer Research Scholars – 2002

• SVM Dean’s International Study Travel Grants – 2003

• University Cooperative Agreement Linkages
  Now: China, S Africa, France, Brazil, West Indies
  Pending: Nepal, Italy, Ethiopia, Spain, Mexico

• Proposals: USDA Challenge Grant; USAID AOL;
  LSU Learning Community Grant (SVM, LSU School of Public Health, Political Science);
  NIH T35 - Summer Student Research Grants
University of Padova, Italy
University of Naples
ILRI Campus- Addis Ababa
Vet Clinic (FVM-Debre Zeit)
Addis Ababa
Previous

International Veterinary

Medical Student Projects
at LSU
Using Geographic Information Systems to Reduce the Zoonotic Transmission of Schistosoma japonicum in China’s lower Yangtze River Basin

Kelly Cunningham Brooks
Class of 2001
Study Area - Jiangsu Province
Yangtze River
Life cycle of *Schistosoma japonicum*
While in Denmark at the Danish Bilharziasis Laboratory, I gained valuable information about the life cycle and transmission of *S. japonicum* as well as an insight to its population biology. This knowledge furthered my understanding of the snail and parasite and better enabled me to use GIS as an epidemiological forecasting tool for prevention and control of *S. japonicum* in Chinese domestic animals.

Area where the *Oncomelania hupensis* snails are maintained.
China Schistosomiasis GIS Construction Plan

Schistosomiasis Disease Prediction and Control Program Management System

MODEL II

MODEL I

Cattle Data

Meteorological Data

Snail Prevalence Data

Human Prevalence Data

Time series, annual & seasonal composites of NDVI & Tmax. Extract values by eradicated & endemic zones.

Digital Chart of the World (Latitude, Longitude, Decimal Degree)
Studies on Traditional and Modern Cures for Zoonotic Schistosomiasis in the Lower Yangtze River Valley of China

Leslie Brown, Class of 2002
and Dr. Zhou from JIPD, China

Study objectives: to define the role of traditional herbal medicines and attitudes regarding veterinary care of cattle and water buffalo on the potential success of future control programs using modern drugs.
Water buffalo and cattle account for 80% of schistosoma egg shedding into the environment. They are the major source of infection for humans.
Chinese children with clinical schistosomiasis japonicum
Student living quarters at Jiangsu Institute of Parasitic Diseases Study Site
Leslie in the field

Water Buffalo
CVM has a long history of development work and ministry through veterinary medicine in many countries. These countries include: Vietnam, Bangladesh, Botswana, the Philippines, Indonesia, Mexico, and the U.S., with the Navajo and Hopi people.

Ann Davidson
Class of 2001
Village Animal Health Care
Accommodations

Home Sweet Home

Dinner – beans, matoke, rice, and posho
Local native home

Dairy herd health seminar participants
School children watching us teach proper milking technique.

Zero grazing unit completed in 3 days without the use of power tools and with only one post hole digger brought from the United States.
EGYPT
Study objectives:
To use satellite imagery and computer mapping methods to develop improved control program management tools for Fasciola transmitted from cattle to man.

Elisabeth Broussard, Class of 2001 and Dr El-Bahy, Cairo University
Cairo University
Faculty of Veterinary Medicine

Snail collections and processing for infective stages
Diagnostics
Satellite Image of Nile Delta – percent infected in white

Annual Composite, 12 images, 1990 - 1991
Temperature Difference of Vegetated Areas
Contours 13.7 and 15 C - AVHRR Ch4
Schistosomiasis Research Project
Scott’s 1935 Survey – S. mansoni
Life in the Nile Delta

Street scene in Tanta – Nile Delta

Cairo and the River Nile
Elisabeth on a camel
Sponsor: Global Health Action

A 3-year LSU project

15 veterinary students participated through field services block: Goat production and health care improvement
Rural transportation in Haiti is by footpath

Interview for questionnaires Dr. Olcott and veterinary student team
Street scenes in Haiti
Research and International Studies Electives Programs at the LSU School of Veterinary Medicine will continue as part of our new curriculum. Students develop their own research plans and apply for funding from various agencies. Previous sponsorships have been provided by the Geraldine R Dodge Foundation. A 4-year old student elective research scholarship program for 6-10 students per year is funded by the Merck-Merial Animal Health Grants Program eligible for funding summer projects. More recently, the Dean’s Office provided seed funding for a student travel grants program for international veterinary student study.