The UC Atlas of Global Inequality is an online teaching resource mapping global inequalities and how they are changing as the world is becoming more integrated. Innovations of this Atlas include: dynamic time series maps showing changing global patterns of inequality over time; an interactive database incorporating data from several international agencies (using PHP and MySQL); on-demand mapping of variables in the database (using ArcIMS); printable maps (generated in ArcView 8.3); animated guides to reading graphs, using the Atlas, getting data; teaching activities using the Atlas; summaries of key debates and links to other literature; a glossary and bibliography. All of these features are online and freely available.
UC Atlas of Global Inequality

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The UC Atlas of Global Inequality

The Atlas of Global Inequality explores some aspects of inequality using online, downloadable maps and graphics. All these materials can be used freely providing they are attributed to the UC Atlas of Global Inequality.

Global income inequality is probably greater now than it has ever been in human history. Currently, the richest 1% of people in the world receives as much as the bottom 57%. There is some debate about whether the inequality gap on a global scale is increasing or decreasing. By one estimate, the ratio between the average income of the top 5% in the world to the bottom 5% increased from 70:1 in 1980 to 114:1 in 1990 (Milanovic 1995). But other aspects of global inequality, notably gaps in life expectancy and infant mortality, have been declining (except in sub-Saharan Africa).

The opening sequence of photos and maps on this home page illustrates some of the maps and data provided in the Atlas and the variety of conditions the data reflect. One feature built into this Atlas is the capacity to view changes in inequality. The sequences of maps show how infant mortality or income inequality change over time.

Buttons on the left of this page lead to theme pages where map presentations can be found. The How to use this site button provides an animated guide to the site.

Information about the Atlas, who works on it, the technologies we use, and our plans, can be found in About Us.

We try to draw attention to the limits of our data, including the use of nations as a unit of analysis, and the use of Gross National Product.
Teaching Goals

- **Objective** - to allow users to examine global inequality and the impact of globalization through *interactive presentations*.

- Maps, graphs, tables, animations and interactive content give students easy (on-line) access to current data and information and deepen student learning.

- To make the site a useful tool for other instructors/institutions

- To increase student comprehension
Origins

- Third World Atlas - hard copy

- **Core Team** - undergraduate students, faculty, staff and Instructional Development specialists at University of California, Santa Cruz

- **Steering Committee** - faculty from other UC campuses with expertise in thematic topics
Process

1. Formed a design/development team
2. Broke down material into themes and presentations
3. Maps created (ArcView 3.x and 8.x using World Bank Development Indicators CD-ROM)
4. Text written for Theme pages and Presentation pages
5. Prototype Web Site developed
How the Site Works

• Themes
  ➢ Health
  ➢ Economic Globalization
  ➢ Income Inequality
  ➢ Connections
  ➢ Inequality and Growth

• Sub Themes
  ➢ Health --- Intercountry Inequality, Cause of Death, Access to Health Care, Disease and Immunization, HIV & AIDS
  ➢ Income Inequality --- Income Ratio PPP, Gross Domestic
  ➢ Economic Globalization --- Foreign Investment, Trade
  ➢ Gender --- India, Sex Ratio
  ➢ Connections --- Telephone
  ➢ Inequality and Growth
Global Inequalities in Health

One cornerstone of justice and equality is equal capability to achieve health (Sen 2002). Those whose cut short by unequal economic and social conditions are subject to a brutal inequality. For this reason of survival, such as life expectancy, have justly become key indicators of social progress. We examine of health inequality: 1) inequalities of life and death between countries, 2) causes of death 3) disease prevalence, 4) health care spending, 5) inequalities within countries

Inequalities of life and death between countries

A child born in Swaziland is nearly 30 times more likely to die before the age of five than a child born in Canada. These are differences between mortality rates in those countries. Inequalities within countries (described below) mean that the difference the mortality of poor children in Swaziland and of rich children in the US is considerably larger. Inequal expectancies, infant mortality and under five mortality are examined in Life and death -- inequalities bet countries.
Disparities in health care spending and numbers of doctors

Differences in access to health care can have far-reaching consequences. Those denied access to basic health care may live shorter and more constrained lives. A dramatic example of this is that inadequate access to health care is thought to be the primary cause of the premature deaths of 100 million “missing women” worldwide. Sen estimated (1990) that 100 million more women would be alive today, primarily in China, South Asia and North Africa, if women and girls had equal access to health care and nutrition across the globe.

Here we examine two aspects of access to health care: spending and the number of physicians.

The page on health care spending makes two points. First, a graph of global population, ranked by average country spending, shows that there are enormous differences in health care spending across the globe. Health care spending per head for the top 5% of world population is nearly 4,500 times spending in the lowest 20%.

Second, two graphs examine the relationship between health care spending and life expectancy. These graphs show that there is a correlation but there are also some striking anomalies. Countries which spend little on health care mostly have low life expectancies, and countries with high health care spending generally have high life expectancies. But there are anomalies in both directions. Some countries with high health care expenditure, such as the United States, have surprisingly low average life expectancy.
Health Care Spending: Large Differences, Unequal Results

Global inequality in health care spending is large. As the chart of health care spending per person shows (below), the countries in the highest quintile (20%) spend more than 16 times the amount spent by the lowest quintile. The highest 5% of the countries spend 4492% of the lowest quintile. This is after adjusting the per capita spending rates to international dollars (to account for Purchasing Power Parity), and includes both government and personal expenditures.
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Money Alone Does Not Extend Lives

Despite the wide gaps, higher spending on health care does not necessarily prolong lives. In 2000, the United States spent more on health care than any other country in the world; an average of $4,500 per person. Switzerland was second highest, at $3,300 or 71% of the US. Nevertheless, average US life expectancy ranks 27th in the world, at 77 years. Many countries achieve higher life expectancy rates with significantly lower spending. The chart below shows the top 30 countries in the world ranked by life expectancy. The red line indicates per capita health expenditure (right axis), and shows that many countries outperform the US with approximately half the spending.

The Cost of a Long Life
Does Having More Doctors Extend Life Expectancy?

Physicians are defined as graduates of any faculty of school of medicine who are working in the country in any medical field, whether in a practice, teaching or research. The map below shows the number of physicians per 100,000 people around 1998, as compiled by the World Health Organization. (See WHO Estimates of Health Personnel.) This measurement attempts to compare health care access for people living in different countries, by comparing their access to health care professionals.
How the Site Works

• **Presentations**
  Illustrate the Themes and/or Sub Themes with Maps, Graphs and Text Includes Life Expectancy, GDP, Diseases, etc.

• **Maps** - Sequences of maps giving data by decade as well as singular maps

• **Data** - downloadable tables of data used to create Maps

• **Graphics** - indicators are graphed from various datasets
Gross Domestic Product

GDP (PPP) per capita 1975

Updated 02/24/03
Webmaster
Interactive Trade Flow Maps
On-Line Database
User-driven, downloadable reports and graphs from queryable database
Step 2: Choose the Indicator(s):

- List Everything
- Economic
- Education
- Gender
- Health
- Population
- Technology and Media

- Agricultural raw materials
- Aid per capita (current US$)
- Birth rate, crude (per 1,000)
- CO2 emissions (kg per person)
- CO2 emissions (kg per PFA)
- CO2 emissions (kt)
- CO2 emissions (metric ton)
- Contraceptive prevalence
- Death rate, crude (per 1,000)
- Expenditure, total (% of GNI)

Step 3: Choose the Years

- By Decade
- Every 5 years
  - Beginning: 1960
  - Ending: 2000
- Yearly
Countries ranked by Illiteracy rate, adult total (% of people ages 15 and above) on year 1960 in ascending order.  
*Ranked values are highlighted in yellow*

<table>
<thead>
<tr>
<th>Country</th>
<th>Illiteracy rate, adult total (% of people ages 15 and above)</th>
<th>Mortality rate, under-5 (per 1,000 live births)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afghanistan</td>
<td>74.15</td>
<td>65.24</td>
</tr>
<tr>
<td>Iraq</td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Most indicators do not have data for all countries or for every year. If you see a blank field in the report, it is because there is no data for that year/indicator/country. The database should become more comprehensive as more data sources are added.

Data for these indicators comes from the World Development Indicators (World Bank 2002 CD ROM).

INFO: No data is available for "Illiteracy rate, adult total (% of people ages 15 and above)" for: Afghanistan, United States
How the Site Works

- **Web GIS** – utilizing ESRI’s ArcIMS technology, will allow users to build their own global and regional maps based on data available in the on-line database (MySQL).
How the Site Works

• Links to other Resources

• Animations
  - How To Use the Site, Graph and Database
  - Life Expectancy and GDP in Sub Saharan Africa

• Support Pages
  – How To Use the Site
  – For Instructors
  – Glossary
  – Bibliography
  – About Us
Innovations & advances

- Capacity to show global change (decade maps with roll-over buttons)
- Access, costs of production, and flexibility are all better than with hard copy atlas
- Potential to include range of initiatives - presentations on new data, supporting essays, country information, new geographic information
New Directions

- **ArcIMS** application that allows users to query the on-line database, and produce “on the fly” maps of the world based on the results of their queries.

- **On-Line Teaching Tutorials** utilizing available tools: maps, graphs, text, searchable database, etc and other technologies such as Flash and web enabled programming, i.e. Java, HTNL, Javascript, PHP, etc.

- **Country Pages** that focus on information for each country using graphs, tables, maps and text
Current Uses

• Prototype used in Sociology 15 at UCSC (300 students)

• Web Logs and E-Mails indicate: Atlas used by Classes and Academics World-Wide
Phase II

✓ Create Interactive Database (MySQL)
  • Users generate their own comparisons, graphs, tables

✓ Deepening content
  • Health (AIDS in Africa)
  • Economy (Structural Adjustment Programs – SAP)
  • Gender
  • Environment (in production)

✓ Case studies that illustrate global processes
  • Trade Flows
  • Mexico
  • AIDS in Africa

✓ Develop Country Pages
Future Plans

Phase III

• Create and Expand Web GIS
• Develop Interactive Teaching Tutorials
• Integrate New Datasets into MySQL database (UNDP, FAO, World Resources Institute, etc.)
UC Atlas of Global Inequality References:

- Braveman, P (2002b). PowerPoint presentation
- OED (2002). Online edition of Oxford English Dictionary. (Accessible free from UC campus networks or appropriate dial-up facility, such as SlugLink).