

## SEMESTER AT SEA COURSE SYLLABUS

**Discipline: Biology**

**Fall 2008**

**BIOL155Z-1, BIOL155Z-2: Plumpy'nut and Big Macs - World Nutrition and Health in Perspective**

**Lower Division (2 sections)**

**Instructor: Michael P. Timko**

Suggested Pre-requisites: Introductory Biology or equivalent

### **Course Description**

This course examines the human quest to meet our basic nutritional and dietary requirements and the issues facing humankind as we try to meet the ongoing and future needs of the world's population. We will develop several major themes: the human diet and what limits the acquisition of nutrients and other compounds necessary in our food supply for proper growth and development and sustained human health; the social, economic and political factors that affect the stable provision of food and nutrition to individuals and populations locally, regionally, and globally; the nutrition situation worldwide and in selected countries and its relationship to health and disease; how globalization of the food industry impacts food quality, nutrition, and health; and how scientists are trying to understand and change the relationship between nutrition and human health through genomics and bioengineering and the social and scientific initiatives underway to deliver better nutrition to those in need.

### **Course Objectives**

1. To gain an understanding of the basic requirements for good personal diet and nutrition, the nature and composition of the essential nutrients and compounds that make up a good diet, and how to evaluate one's personal nutritional status.
2. To appreciate how different societal groups address their nutritional needs by examining local diets and nutrition in places visited along the voyage and the nature and scope of the chief nutritional constraints faced by individuals and populations in these areas on a daily basis.
3. To examine how globalization of the food industry influences diet composition and quality.
4. To gain an understanding of the relationship between nutrition and health from a local and regional perspective and the principal environmental, cultural, socioeconomic, and political factors that influence the distribution and severity of global nutritional and health problems.
5. To examine the impact of governmental, corporate and private activism efforts to address local and regional food needs, nutritional constraints, and improve health.

## Course Syllabus by Lecture Topics

Leave Nassau, Bahamas

**A1 Welcome and Introduction: Challenges in personal and global nutrition**

**A2 Topic: What the body needs - the changing face of nutritional guidelines**

Assignment: Start Personal Diet Analysis I

**A3 Topic: Sugars and Starches – the Brazilian Diet**

Arrive Salvador, Brazil

**A4 Topic: Proteins and Protein Energy Malnutrition (PEM)**

**A5 Topic: Plumpy'Nut and Ready to Use Therapeutic Foods (RUTF)**

**A6 Topic: Famine, world food programs & relief efforts in Africa**

**Exam I: In class**

Arrive Walvis Bay, Namibia

**A7 Topic: HIV/AIDS, TB, and Nutrition**

Arrive Cape Town, South Africa

**A8 Topic: Vitamins and Vitamin Deficiencies**

Assignment: Start Personal Diet Analysis II

**A9 Topic: The Golden Rice Project – Humanitarianism vs Biotechnology**

**A10 Topic: Micronutrients and Disease**

**A11 Topic: Biofortification Projects**

**Exam II: In class**

**A12 Topic: Combating Poor Nutrition in India**

**First Response Paper due**

Arrive Chennai, India

**A13 Topic: Tropical Fats and Oils – Diet Friends or Foes?**

**A14 Topic: Globalization of Food -The MacDonalidization Phenomenon**

Arrive Penang, Malaysia

**A15 Topic: Avian Influenza and Emerging Pandemics.**

Arrive Ho Chi Minh City, Vietnam

**A16 Topic: Food Additives and Food Supplements - Globalization and Food Safety**

Arrive Hong Kong -Shanghai, China

**A17 Topic: Prions, Mad Cow Disease, the Global Safety of Meat Products  
Second Response Paper due**

Arrive Kobe, Japan - Yokohama, Japan

**A18 Topic: Religious, moral and ethical perspectives on food biotechnology**

Assignment: Start Personal Diet Analysis III

**A19 Topic: Nutrigenomics – designing what you should eat by who you are.**

**A20 Student Presentations**

**A21 Student Presentations**

Arrive Honolulu, Hawaii

**A22 Student Presentations**

**A23 Topic: Realizing global nutrition and health in the future**

**Final Response Paper Due**

Arrive Puntarenas, Costa Rica

**A EXAM DAY - Exam III**

Transit Panama Canal

Arrive Miami, Florida

## Course Syllabus - Reading Assignments

Required readings are designated by an asterisk. Students are expected to read this material before attending class and are responsible for learning the covered information.

Additional/supplemental readings are provided for the more inquisitive students wishing to pursue a topic in more depth and detail. Information from these reading will occasionally be referred to or discussed in the context of a lecture or group of lectures. Students will only be responsible for those aspects of these materials covered in class. These readings will be provided as pdf or word documents placed on the class home web page in advance of the class.

Leave Nassau, Bahamas

### **A1 Welcome and Introduction: Challenges in personal and global nutrition**

#### **A2 Topic: What the body needs - the changing face of nutritional guidelines**

##### **Assignment: Start Personal Diet Analysis I**

Readings:

\*Sizer & Whitney, Nutrition Concepts and Controversies, Chapters 1 & 2, and pages 91- 98

\*Willett, W.C., Stampfer, M.J. Rebuilding the Food Pyramid, Scientific American, Jan. 2003., Vol. 288, No. 1:64-69. (pdf)

Semba & Bloem, Nutrition and Health in Developing Countries, Chapter 1. Nutrition, Health, and Development: A Historical Perspective

DeRose, Messer & Millman (1998) *Who's hungry? And how do we know?* Chapter 2: Measuring Hunger. Tokyo: United Nations University Press.

<<http://www.unu.edu/unupress/unupbooks/uu22we/uu22we00.htm>>

#### **A3 Topic: Sugars and Starches – the Brazilian Diet**

Readings:

\*Sizer & Whitney, Nutrition Concepts and Controversies, Chapter 4

Sawaya A.L., et al. (2003) The link between childhood undernutrition and risk of chronic diseases in adulthood: A case study of Brazil. *Nutr Rev.* 61:168-75.

FAO, Nutrition Country Reports – Brazil (pdf)

Arrive Salvador, Brazil

#### **A4 Topic: Proteins and Protein Energy Malnutrition (PEM)**

Readings:

\*Sizer & Whitney, Nutrition Concepts and Controversies, Chapters 6 & 9

Semba & Bloem, Nutrition and Health in Developing Countries, Chapter 12. Malnutrition

**A5 Topic: Plumpy'Nut and Ready to Use Therapeutic Foods (RUTF)**

Readings:

\*Dolan, S. ECHO and UNICEF promote Plumpy'nut production to improve child nutrition in Niger, <http://www.unicef.org/infobycountry>

\*Briend, A., Lacsala, R., Prudhon, C., Mounier, B., Grellety, Y. (1999) Golden MHN. Ready-to-use therapeutic food for treatment of marasmus. *The Lancet*; 353: 1767.

\*Manary, M.J., et al. (2004) Home-based therapy for severe malnutrition with Ready-to-use food. *Arch Dis Childhood* 89: 577-561.

Sandige, H., et al. (2004) Locally produced and imported ready-to-use-food in the home-based treatment of malnourished Malawian children. *J. Pediatric Gastro Nutrition* 39: 141-146.

Diop, et al. (2003) Comparison of the efficacy of a solid ready-to-use food and a liquid, milk based diet for rehabilitation of severely malnourished children: A randomised trial. *American Journal of Clinical Nutrition*; 78:302-307.

Patel, MP, et al. (2005) Supplemental feeding with Ready-to-Use therapeutic food in Malawian children at risk of malnutrition. *J. Health Pop and Nutr*.

**A6 Topic: Famine, world food programs & relief efforts in Africa**

**Exam I: In class**

Readings:

Benson, T. (2004) Assessing Africa's Food and Nutrition Security Situation. Where Are We and How did We Get There? International Food Policy Research Institute (IFPRI), 2020 Discussion paper 37. Washington D.C. <<http://www.ifpri.org/2020/dp/dp37/2020dp37.pdf>>

Semba & Bloem, Nutrition and Health in Developing Countries, Chapter 24. Humanitarian Emergencies

Semba & Bloem, Nutrition and Health in Developing Countries, Chapter 25. Tackling Nutrient Deficiencies and Life-Threatening Disease: The Role of Food in Humanitarian Relief  
FAO, Nutrition Country Reports – Namibia (pdf)

Arrive Walvis Bay, Namibia

**A7 Topic: HIV/AIDS, TB, and Nutrition**

Readings:

AIDS in Africa : three scenarios to 2025. Joint United Nations Programme on HIV/AIDS (UNAIDS) 2005. HIV/AIDS, TB, and Nutrition. The Academy of Science of South Africa, 2007

Lawrence, H., and Stuart, G. (2001) Effective food and nutrition policy responses to HIV/AIDS: what we know and what we need to know (p 487-511), Published Online: 3 Jul 2001, DOI: 10.1002/jid.799

<http://www3.interscience.wiley.com/cgi-bin/fulltext/84504069/PDFSTART>

Semba & Bloem, Nutrition and Health in Developing Countries, Chapter 10. Tuberculosis

Semba & Bloem, Nutrition and Health in Developing Countries, Chapter 11. Human Immunodeficiency Virus Infection

Arrive Cape Town, South Africa

**A8 Topic: Vitamins and Vitamin Deficiencies**  
**Assignment: Start Personal Diet Analysis II**

Readings:

\*Sizer & Whitney, Concepts and Controversies Chapters 7 & 8

Semba & Bloem, Nutrition and Health in Developing Countries, Chapter 13. Vitamin A Deficiency

Semba & Bloem, Nutrition and Health in Developing Countries, Chapter 14. Vitamin D Deficiency and Rickets

WHO/UNICEF (World Health Organization/United Nations Children's Fund) (1995). Global prevalence of vitamin A deficiency. Micronutrient Deficiency Information System, MDIS Working Paper No. 2 World Health Organization, Geneva, Document WHO/NUT/95.3.

**A9 Topic: The Golden Rice Project – Humanitarianism vs Biotechnology**

Readings:

\*Functional Foods, The Pew Charitable Trust, July 2007

\*Potrykus, I. (2000) The 'golden rice' tale. AgBioView, 23 Oct 2000. AgBioWorld, Tuskegee Institute, Alabama, <http://www.agbioworld.org/biotech-info/topics/goldenrice/tale.html>.

Jayaraman, K.S. (2002) Natural 'golden millet' rivals 'golden rice'. Science and Development Network (SciDevNet), May 2002.

Toenniessen, G.H. (2000) Vitamin A deficiency and golden rice: the role of the Rockefeller Foundation. The Rockefeller Foundation, New York, 14 November 2000.

**A10 Topic: Micronutrients and Disease**

Readings:

\*Sizer & Whitney, Nutrition Concepts and Controversies, Chapters 7 & 8

Supplemental Readings:

Semba & Bloem, Nutrition and Health in Developing Countries, Chapter 18. Multiple Micronutrient Malnutrition

Semba & Bloem, Nutrition and Health in Developing Countries, Chapter 15. Zinc Deficiency;

Semba & Bloem, Nutrition and Health in Developing Countries, Chapter 16. Iron Deficiency and Anemia;

Semba & Bloem, Nutrition and Health in Developing Countries, Chapter 17. Iodine Deficiency Disorders

**A11 Topic: Biofortification Projects**

**Exam II: In class**

Readings:

\*Sizer & Whitney, Nutrition Concepts and Controversies, Chapter 7 & 8  
 Darnton-Hill, Ian. "Overview: Rationale and Elements of a Successful Food Fortification Programme". United Nations University. 6 September 2005.  
 <<http://www.unu.edu/unupress/food/V192e/ch02.htm>>  
 "Eighteen Nations Fortify Foods". Nutrition. February, 1996. United Nations Children's Fund. 6 September, 2005. <<http://www.unicef.org/pon96/nufortif.htm>>  
 Prakash, C.S. "Biotechnology Used to Fortify Rice with Iron". *Plant Research News*. December, 1997.  
 Gura, T. (1999) New genes boost rice nutrients. *Science*, 285, 994–995.  
 Lucca, P., Hurrell, R., Potrykus, I. (2002) Fighting iron deficiency anaemia with iron-rich rice. *Journal of the American College of Nutrition* 21: 184S–190S.

**A12 Topic: Combating Poor Nutrition in India**  
**First Response Paper Due**

Readings:

Kurtz, P. "India's Population Time Bomb". *Free Inquiry Magazine*. Spring, 1999.  
 Jayaraman, K.S. "India Set to Embrace GM Rice". *Nature Biotechnology*. 2003, ed.117.  
 Swaminathan, M.S. "Hunger, Bridging the Nutritional Divide". *Hunger vol. 2 issue 6*.  
 Randerson, J. "India Special: Embracing GM Crops". *New Scientist Magazine*. 19 February 2005, Ed. 2487.

Arrive Chennai, India

**A13 Topic: Tropical Fats and Oils – Diet Friends or Foes?**

Readings:

\*Sizer & Whitney, Nutrition Concepts and Controversies, Chp 5  
 \*Making the palm oil "green", by Tom Wright, Wall Street Journal (Europe), Vol XXV, No. 245, Jan 18-20, 2007

Semba & Bloem, Nutrition and Health in Developing Countries, Chapter 21. The Emerging Problem of Obesity in Developing Countries

**A14 Topic: Globalization of Food -The MacDonalidization Phenomenon**

Readings:

\*Sizer & Whitney, Nutrition Concepts and Controversies, Chapter 15  
 \*Laura Durnford, The MacDonalidization of Hong Kong, Global Policy Forum  
 \*Eric Schlosser, Fast Food Nation, 10.Global Realization  
 \*Huynen MMTE et al.(2005)The health impacts of globalization: a conceptual framework. *Globilization and Health* 1:14  
 Semba & Bloem, Nutrition and Health in Developing Countries, Chapter 27. Supermarkets  
 Prabhu Pingali (2007) Westernization of Asian diets and the transformation of food systems: Implications for research and policy. *Food Policy* 32: 281- 298  
 Excerpts from J.L.Watson (ed.) Golden arches east: McDonald's in East Asia. Stanford: Stanford University Press  
 Excerpts from Jeffrey M. Pilcher, Food in World History, Routledge Press 2005

Arrive Penang, Malaysia

**A15 Topic: Avian Influenza and Emerging Pandemics.**

Required readings:

\*Kilbourne, E.D. (2006) Influenza Pandemics of the 20<sup>th</sup> Century, Emerging Infectious Diseases ,2006 Jan;12(1):9-14.CDC (pdf)

Evolution of H5N1 Avian Influenza Viruses in Asia.The World Health Organization Global Influenza Program Surveillance Network. Emerging Infectious Diseases, www.cdc.gov/eid Vol. 11, No. 10, October 2005

Avian Influenza A Virus Infections of Humans, CDC Reports

Key Facts About Swine Influenza (Swine Flu), CDC Reports

FAO, Nutrition Country Reports – Viet Nam (pdf)

Arrive Ho Chi Minh City, Vietnam

**A16 Topic: Food Additives and Food Supplements - Globalization and Food Safety**

Readings

\*Eric Schlosser, Fast Food Nation, 5. Why the Fries Taste Good

\*Barrionuevo, Alexei, “Food Imports Often Escape Scrutiny.” The New York Times, May 1, 2007;

<http://www.nytimes.com/2007/05/01/business/01food.html?pagewanted=2&ei=5070&en=a064f174c2e7c20d&ex=1179460800>

\*Bodeen, Christopher, “China Zeroes in on Food and Drug Safety.” Washington Post, May 9, 2007; <http://www.washingtonpost.com/wp-dyn/content/article/2007/05/09/AR2007050900308.html>

\*CBSNews.com, “Pet Food Toxin Said to be Common in China.” April 30, 2007;

<http://www.cbsnews.com/stories/2007/04/30/health/main2740043.shtml>

\*Pritchard, Justin, “Increasing Imports of Ingredients Underscore U.S. Food Supply

Vulnerability.” NCTimes.com, May 14, 2007;

[http://www.nctimes.com/articles/2007/04/24/health/14\\_21\\_464\\_23\\_07.txt](http://www.nctimes.com/articles/2007/04/24/health/14_21_464_23_07.txt)

\*Cha, Ariana Eunjung, “China Food Fears Go From Pets to People.” Washington Post, April 25, 2007, A01; [http://www.washingtonpost.com/wp-dyn/content/article/2007/04/24/AR2007042402539\\_pf.html](http://www.washingtonpost.com/wp-dyn/content/article/2007/04/24/AR2007042402539_pf.html)

Arrive Hong Kong -Shanghai, China

**A17 Topic: Prions, Mad Cow Disease, the Global Safety of Meat Products**

**Second Response Paper due**

Readings:

\*Eric Schlosser, Fast Food Nation, 9.What's in the Meat; Afterword: The Meaning of Mad Cow

Watts JC, Balachandran A, Westaway D (2006) The expanding universe of prion diseases.

PLoS Pathog 2(3): e26.DOI: 10.1371/journal.ppat.0020026

Arrive Kobe, Japan - Yokohama, Japan

**A18 Topic: Religious, moral and ethical perspectives on food biotechnology**

Assignment: Start Personal Diet Analysis III

Readings:

\*Popp, T. (2008) God and the new foodstuffs. Agbioworld Forum.

\*Galun, E. Genetically manipulated plants: Ethical and Religious Issues. Agbioworld Forum

\*Muslim Council Approves GM foods, Jakarta Post, July 8, 2003

Semba & Bloem, Nutrition and Health in Developing Countries, Chapter 33. Ethics in Public Health Research

Excerpts from Gregory E. Pence (ed.)The Ethics of Food: A Reader for the Twenty-First Century, Rowman & Littlefield Pub, Inc. 304 pp <http://www.rowmanlittlefield.com> ISBN 0-7425-1334-3 (2002)

Barber, Benjamin (1995). Jihad vs. McWorld: How Globalism and Tribalism are Reshaping the World. New York: Times

Nuffield Council on Bioethics (1999a). Genetically modified crops: the ethical and societal issues. Nuffield Council on Bioethics, London,

[http://www.nuffieldbioethics.org/go/publications/latest\\_30.html](http://www.nuffieldbioethics.org/go/publications/latest_30.html).

**A19 Topic: Nutrigenomics – designing what you should eat by who you are.**

Readings:

\*Nugent, A. (2004) Nutrigenomics: Tailor-made foods for a genetic era? Nutrition Bulletin 29: 82-83.

\*Ravi Sunniah M.T. (2007) Nutrigenetics and nutraceuticals: the next wave riding on personalized medicine. Translational Research 149: 55.

Müller, M., Kersten, S. (2004) Nutrigenomics: goals and strategies. Nat Rev Genet, 2004, 4, s. 315-322.

Fenech, M. (2005) The Genome Health Clinic and Genome Health Nutrigenomics concepts: diagnosis and nutritional treatment of genome and epigenome damage on an individual basis. Mutagenesis 20: 55-59

Mutagenesis 20: 55-59

Modern food biotechnology, human health and development: an evidence-based study. Social and ethical concerns about GM foods. WHO 2005, pages 49-60

**A20 Student Presentations**

**A21 Student Presentations**

Arrive Honolulu, Hawaii

**A22 Student Presentations**

**A23 Topic: Realizing global nutrition and health in the future**

Final Response Papers Due; Diet Analysis Summary Due

Arrive Puntarenas, Costa Rica

**A EXAM DAY - Exam III**

Transit Panama Canal

Arrive Miami, Florida

**Student Evaluation and Grading:**

Student performance and grading will be evaluated as described below.

Activity	Description	Value	Total
Exams	In class - days indicated	10 points each	30 points
Personal Diet Analysis Projects (Three 4-5 day analyses)	Individual Diet Analysis Report	5 points each	15 points
Diet Analysis Summary	Summary Report	5 points	5 points
Short Response Papers	Based on FDP, IDP, field activities	10 points each	30 points
Oral presentation	Powerpoint/5-10 min	10 points	10 points
Class participation	(attendance, posing and answering questions that give evidence of understanding readings, participation in class discussions)	10 points	10 points
Total			100 points

Examinations - There will be three in class Exams administered throughout the course. These will be short and topical in nature, not cumulative.

Personal Diet Analyses - Students will carry out three diet analysis projects based on records of what they consume during three separate 4-5 day periods at various stages of the voyage. The purpose of these records is to compare how the voyage may or may not have changed the students eating habits and how the student may have modified their diet by their experiences in the course and in the countries visited. The due date for write-ups will be given in class.

Students should keep a journal to reflect on the following questions:

- How did your food consumption and diet change?
- Was your diet influenced by your experiences in port?
- What new things have you added to your diet in the course of the voyage.
- Observations about local dietary customs.

At the end of the third analysis, student will prepare a summary report integrating the above journal observations and comparing their three personal diet analyses.

Short Response Papers - Students will be required to write three 5-10 page papers discussing an aspect of world health/nutrition from a regional perspective. These short response papers are to be based on field activities (Faculty Directed Practica, Independent Practica). Students are expected to use primary or secondary sources of information (e.g., photos, interviews, measurements, government publications, etc) gathered during their practica and to provide specific references (6-10 minimum references).

Oral Presentation - Students will give an oral presentation of one of their response topics, integrating information accumulated throughout the voyage to provide a multi-regional / global perspective to the topic. The presentation will be Power Point based and 7-10 minutes in duration.

Class Participation - Student participation in class discussions is an essential component of the learning experience.

### **Field Component:**

Each student is expected to undertake a minimum of three practica. At least two of your practica need to be Faculty Directed Practica (FDP) led by me since during these outings we will experience first hand material discussed in the class. The third practica may be either a FDP led by me, another faculty member, or an Independent Practica (IND) of your own choosing and design. Your IND may be developed within the context of a regularly-scheduled SAS trip, or it may be a truly novel activity. Regardless of whether the student chooses an FDP led by another faculty member, participation in an SAS tour activity, or chooses to develop their own IND, they must meet with me prior to arriving in the port-of-call to discuss his or her approach, objectives, and goals.

For this course I plan to minimally offer FDP opportunities in the following ports: Salvador, Brazil, Cape Town, South Africa, and Chennai, India. You are encouraged to choose minimally two from among this set to fulfill your FDP requirement. You can choose all three. In addition, several FDPs either offered by me (e.g., in Penang, Malaysia) or other faculty (in Yokohama, Japan) could be used to fulfill the third FDP requirement. I will provide additional information in class about the nature and goals of these practica. Keep in mind that the three required “response papers” are based on your experiences during your field visits. Therefore, at the minimum students will be required to keep a written record of their field observations. Written information, photos, and other materials collected during FDP, IDP, field visits will be used in the preparation of student’s required oral presentation.

Some examples of appropriate Independent Practica topics are listed below:

Visit (not necessarily eat at) a common “Fast Food” type of restaurant in three different ports of call and compare what is on the menus. How does this compare to “traditional local” fast foods and differ from what is served in a similar establishment in the US. (Are all Big Macs, Whoppers, KFC’s created equal?).

Develop a project based on visits to local individuals’ homes/ kitchens and discuss with them the types of food they generally consume on a daily basis. Do the concepts of breakfast foods, lunch, and dinner translate from culture to culture.

Visit a local health clinic or aid station (could be associated with a hospital, university, ministry) and discuss with them the limitations that they see in providing for the health and nutrition of their cliental.

Keep a field notebook in which you record several of the following health-related factors in each port-of-call or city visited on a field trip: (1) the relative number of homeless, beggars or indigent children; (2) the availability of well-publicized health facilities (clinics, hospitals, medical missions); (3) number of advertisements, bulletins, posters promoting practices to limit the spread of HIV, or other communicable diseases; (4) things you learn about medical care, in the community.

### **Required Textbooks and Materials:**

**AUTHOR:** Sizer and Whitney  
**TITLE:** *Nutrition, Concepts and Controversies.*  
**PUBLISHER:** Thompson, Wadsworth  
**ISBN #:**  
**DATE/EDITION:** 11th  
**COST:**

**Diet Analysis Plus 7.0.1 Windows/Mac (CD-ROM)** by [Wadsworth](#) (Author)

### **Reserve Textbooks and Materials**

**AUTHOR:** R.E. Semba and M.W. Bloem (Editors)  
**TITLE:** Nutrition and Health in Developing Countries  
**PUBLISHER:** Humana  
**ISBN #:** 978-1-934115-24-4  
**DATE/EDITION:** 2nd ed., 2008 Approx 811p.

**AUTHOR:** Eric Schlosser  
**TITLE:** Fast Food Nation: The Dark Side of the All-American Meal  
**PUBLISHER:** Houghton Mifflin Company  
**ISBN #:** 13: 9780395977897  
**DATE/EDITION:** 2001

**AUTHOR:** C.G. Helman  
**TITLE:** Culture, Health and Illness, 5<sup>th</sup> edition  
**PUBLISHER:** Oxford University Press,  
**ISBN #:**  
**DATE/EDITION:** 2007

**AUTHOR:** Gregory E. Pence (ed.)  
**TITLE:** The Ethics of Food: A Reader for the Twenty-First Century  
**PUBLISHER:** Rowman & Littlefield Pub, Inc., <http://www.rowmanlittlefield.com>  
**ISBN #:** 0-7425-1334-3  
**DATE/EDITION:** 2002

**AUTHOR:** Brown, Nancy Marie and Nina V. Fedoroff.  
**TITLE:** *Mendel in the Kitchen.*  
**PUBLISHER:** Washington D.C.: Joseph Henry Press  
**ISBN #:**  
**DATE/EDITION:** 1999

## **DVDs**

Hamburger: Macprofit, A film by Peter Heller

Hamburger: Jungleburger, A film by Peter Heller