



UNC  
GLOBAL

THE UNIVERSITY  
of NORTH CAROLINA  
at CHAPEL HILL

COLLEGE OF ARTS & SCIENCES

STUDY ABROAD OFFICE

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December 17, 2010

Administrative Board of the College of Arts & Sciences  
Office of General Education  
CB # 3510  
300 Steele Building  
UNC-CH

Dear Colleagues:

**Arava Institute for Environmental Studies, Israel**

The Institute for the Environment and the Study Abroad Office are seeking your approval for a proposal to establish a semester study abroad program for UNC-CH students in the Arava Valley, Israel, beginning in the 2012 spring and continuing every semester thereafter. The program is organized by the ARAVA Institute for Environmental Studies. Further information about the ARAVA Institute can be found at:

<http://www.arava.org/default.asp>

This program is of special relevance to Environmental Studies, Biology and other Earth Sciences majors, but also offers academic courses of interest to Geography, Global Studies, and Peace, War and Defense majors, as well as students with academic interests in the Middle East more generally.

This proposal was developed by Greg Gangi (Associate Director for Education, Institute for the Environment) and Rodney Vargas (Latin America, Africa & the Middle East Programs Director of UNC at Chapel Hill Study Abroad). Mr. Vargas conducted a site visit in March of 2010 to meet with the ARAVA faculty and staff and review the logistical arrangements for the program.

## **Program Rationale**

Since 1996, the Arava Institute for Environmental Studies has offered academic programs to students from Israel and other countries in the Middle East as well as from the United States and Europe. The Arava Institute for Environmental Studies is a regional center for environmental research and policy located in the scenic Arava Valley in Southern Israel. The unique leadership-training program in Middle Eastern environmental cooperation offered by the Institute attracts a diverse combination of students from different countries, religions and cultures for whom the environmental forum provides a focal point for dialogue. It is notable for the fact that Arab and Jewish students live and study together, ensuring a fascinating and edifying experience for all participants. The academic program seeks to offer a balanced scientific, political and social understanding of complex issues concerning the environmental future of Israel and her neighbors today and in the future.

## **Program Site**

The Arava Institute is located on Kibbutz Ketura, situated 50 km north of Eilat in the Arava Rift Valley. For a map of the Arava region, please see:

<http://www.eilat-guide.com/images/maps/arava.gif>

While other kibbutzim are moving more towards privatization, Ketura continues to expand its public, communal sector and it continues to add buildings. Present building projects include new neighborhoods, artist studios, a modernized library and a new factory that will utilize the newest technological advances in the world of algae farming. Further information about about Kibbutz Ketura is available at:

<http://www.ketura.org.il>

## **Program Structure and Content**

The Arava Institute is accredited through the Overseas Students Program at Ben Gurion University of the Negev. Its academic program is conducted in English and offers two fourteen-week semesters (Fall and Spring). UNC-Chapel Hill students will be able to enroll in either semester or for a full academic year. The academic schedule includes an Interdisciplinary Seminar analyzing regional environmental issues, and courses in three concentrations - Ecology & Environmental Sciences, Environmental Policy, and Environmental Social & Cultural Studies. Students are required to take a minimum of four credit bearing courses, including one interdisciplinary compulsory course. Students may choose an independent credit bearing study project as one of their elective courses.

In addition, students are required to participate in the Arava Institute's Peace-building and Environmental Leadership Seminar (PELS) which consists of discussions, workshops, guest lectures, and field trips. There are two components to the PELS program: Peace-building (PB) and Environmental Leadership (EL). PELS-PB includes professional facilitation from Jewish-Arab teams experienced with intra-group dialogue. PELS-EL focuses on gaining skills for effective environmental campaigning, including work in groups, decision making, project planning, media relations and direct action. This seminar is not credit-bearing.

UNC-Chapel Hill students will receive transfer (TREQ) credit for all credit-bearing courses when they earn a minimum of a C grade or higher.

It is anticipated (although not guaranteed) that the following classes will be offered in the 2011/2012 academic year:

#### **Fall 2011**

##### **Required Courses:**

- Sustainable Development: Principles, Concepts and Implementation: An Interdisciplinary Course – Dr. Clive Lipchin
- Peace Building and Environmental Leadership Seminar (not for credit) – Michelle Shachar

##### **Policy Courses:**

- Introduction to Environmental Policy – Prof. Alon Tal/ Dr. Daniel Orenstein
- Climate Change – Dr. Alon Tal / Dr. Daniel Orenstein
- Environmental Mediation –Dr. *Fadia Daibes Murad*, Timea Spitka, and *Robin Twite*

##### **Science Courses:**

- Introduction to Ecology – Elli Groner
- Introduction to Environment Science – Global Issues – Dr. Shmuel Brenner
- Introduction to Sustainable Agriculture – Dr. Elaine Solowey
- Ecology of the Gulf of Aqaba – Dr. Elli Groner, Dr. Reuven Yosef, Dr. Gidon Winters

##### **Social and Cultural Courses:**

- Environmental Education: From Theory to Practice – Dr. Hanan Ginat
- Introduction to Environmental Ethics – Dr. Uri Gordon

#### **Spring 2012**

##### **Required courses:**

- Water management in the Middle East: An interdisciplinary course – Dr Clive Lipchin and Dr Fadia Daibes Murad
- Peace and Environmental Leadership Seminar' – Michelle Shahar (Not for credit)

### Science Courses:

- Earth sciences – Dr Hanan Ginat
- Ecohealth – Dr Rick Eden, Jumanah Essa
- Local Science issues – Dr Shmuel Brenner
- Environmental Biology – Dr Gabi Bennet
- Landscape Ecology – Dr Elli Groner & Micha Silver
- Alternative Energy Seminar (2 credits) – Dr Shmuel Brenner

### Policy and social courses

- Environmental economics – David Lehrer and Dr Nir Becker
- Environmental Law - Dr Jack Jacobs
- Environmental politics - Dr Uri Gordan
- Archeology and human ecology – Dr Uzi Avner
- Collapse: Environmental Anthropology – Dr Avigail Morris & Dr Elli Groner
- Food, Land and culture – Dr Elaine Solowey

### Seminars

- Independent study project – Dr Clive Lipchin
- Biodiversity of sand dune (an intensive 6 days field work course- 2 credits) – Dr Elli Groner

All courses are 3 credits unless otherwise stated.

Please see Appendix 1 for the proposed schedule and syllabi for the 2011 courses, and Appendix 2 for sample CVs for the ARAVA faculty.

It is anticipated that the following field trips will be offered during academic year 2011/2012:

#### Fall semester:

- Environmental Justice and Sustainable Development in the Negev – Ramat Hovav, Darijat, Yerucham, Wadi El Nam, Mitspa Ramon
- Renewable energy in Israel – Sede Boqer, Weizman Institute, Haifa

#### Spring semester:

- Water Resources of the Mountain Aquifer and Coastal Plain – Ashkelon, Tel Aviv, Jerusalem, Wadi Fukin, Alexander River
- Water Use and Management in the Jordan River Watershed: Jordan (2 days) (Aqaba, Amman, Irbid, Jerash –Galilee, Israel (2 days) -Dead Sea (both sides of the border)

In addition, most courses include a one day or half day trip in the area related to the topic of the course.

## **GPA, Language and Other Requirements**

Minimum GPA requirement: 3.0

Language of study: English

At least one year of university study

## **Safety and Security**

Currently, the US Department of State warns U.S. citizens of the risks of traveling to Israel, the West Bank and the Gaza Strip. The Travel Warning can be reviewed at:

[http://travel.state.gov/travel/cis\\_pa\\_tw/tw/tw\\_922.html](http://travel.state.gov/travel/cis_pa_tw/tw/tw_922.html)

In accordance with the current UNC-Chapel Hill Travel Policy, students who wish to participate in study abroad programs in Israel are therefore required to sign a formal legal waiver that, *inter alia*, acknowledges that they have read and understood the Department of State Travel Warning.

The Arava Institute offers the following Statement of Policy regarding crisis situations:

“The Arava Institute views the safety of its students as a paramount value and would not continue to run its program if doing so involved placing students at risk. The Institute administration reevaluates the security situation periodically and is committed to taking any additional steps if there is an indication that such measures are necessary. At this time, the Institute feels confident that the operation of its academic program does not place AIES students in any danger. At the same time, the present enmity makes the Institute’s mission of cooperation more important than ever.

To ensure student safety, the student life program distributes a travel advisory for Arava Institute students, specifying areas that should be avoided and when necessary suggesting strongly that they limit their travel. Guidelines for non-Israeli students about normal security practices in Israel such as checking bags at entrances to malls or stores, the concept of “suspicious objects”, etc... are presented to students. Students traveling in Israel are requested to maintain contact with the Arava Institute student life department periodically and provide it with their cellular phone numbers so that they can be reached when they are away. An armed guard accompanies all official AIES overnight trips in the country.

The Institute considers the Kibbutz Ketura community, in which the Institute campus is located, to be an extremely safe place. The kibbutz would only become unsafe for non-Israeli students to stay on the kibbutz in the unlikely event that there was threatening military activity along the Jordanian or Egyptian borders in the immediate area, or if the Southern Arava region's Israeli civil authorities were to declare a state of high alert or war. There are few scenarios at present where this seems imaginable. If such a situation arose, however, the Institute would help students make arrangements to immediately reserve flights from the Eilat airport to Ben Gurion airport where they would continue on

to their home country. In such a case, the Institute would also notify the home country's embassy for students so they would know the whereabouts of their citizens.

Please note that Kibbutz Ketura is not in a contested area, and that its isolation adds a significant margin of safety to the Institute's other measures.

If a student has to leave the program early, the Institute would evaluate the requirements of each course separately for completion. Some courses have no exams, but rather a final paper, in which case the paper could be turned in early - or submitted by mail. Some courses have take-home exams that can be administered from a distance. If a course has a conventional exam, the Institute would arrange with its lecturer to either have it administered at the students' home university or to allow the student to take the exam early.

In any case, the Institute will make whatever arrangements are necessary so that students can complete the program."

The Arava Institute provides all students with information about a 24/7 emergency telephone number.

### **Library Facilities and Access to Books and Articles**

The Arava Institute offers an environmental library with updated environmental books and textbooks. In addition, students have access to the Ben Gurion on-line university data base.

### **Accommodation and Meals**

Students live in Arava Institute dormitories, generally two to a room, which are located on Kibbutz Ketura. Students eat three meals a day in the Kibbutz dining room.

### **Visa Information**

Students will travel to Israel with a Student A-2 Multiple-Entry visa valid for one year, which can be obtained at the nearest Israeli embassy in the US.

### **Travel Arrangements**

Students are responsible for making their own travel arrangements to Israel. The Arava Institute provides transportation for students from Tel Aviv and Jerusalem to Ketura on

the first day of orientation, and back to Tel Aviv and Jerusalem on the last day of the program.

### **Computers and Internet Access**

It is strongly recommended that students bring their own laptop computers with them. But there are 3 computers in a small computer lab for general student use and there are a limited number of computers to distribute to students who do not arrive with a computer. Additional computer support at the Institute includes:

- “Help Desk” support for connectivity to internet and to the server, Institute account use and use of the MS Office suite of programs.
- Access to internet via cable, or wireless.
- Access to Ben Gurion University’s on-line journals for reference via a Virtual Private Network.

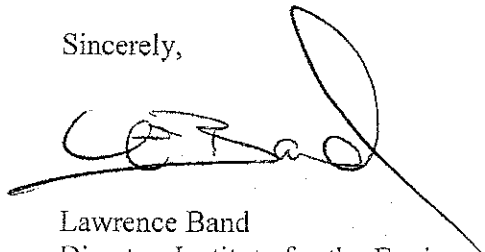
### **Health Care and Insurance**

Students will have international health insurance through HTH Worldwide, as required by UNC-Chapel Hill.

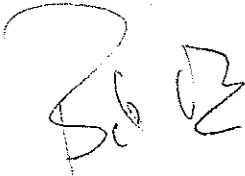
Health services are provided at the local council clinic 10 minutes away from the Kibbutz Ketura. The clinic is open 6 days a week, with a doctor available most of those days. An emergency service is provided for the night hours when the clinic is closed. Yosef Tal Hospital is located in Eilat, 30 minutes away. An ambulance is located on the Kibbutz in the event of a medical emergency.

We hope this proposal has given a clear representation of the semester study abroad program that we wish to offer beginning in spring 2012 and thereafter every semester. The Institute for the Environment and the Study Abroad Office are excited by the potential opportunity presented and we hope the Administrative Board will give this proposal all serious consideration. We are happy to provide you with any additional information, if you desire, to aid in your evaluations of this proposal.

Sincerely,

A handwritten signature in black ink, appearing to read "Lawrence Band", with a long horizontal stroke extending to the right.

Lawrence Band  
Director, Institute for the Environment

A handwritten signature in black ink, appearing to read "Robert Miles", with a stylized, cursive style.

Robert Miles, PhD.  
Associate Dean for Study Abroad and International Exchanges



**Appendix 1**  
**Schedule and Course Syllabi**



معهد وادي عربة

## Academic Calendar for 2010-2011

MASA Students	28 September, 2010	-	28 January, 2011
Fall semester 2010	06 October, 2010	-	28 January, 2011
Spring semester 2011	22 February, 2011	-	24 June, 2011
Key for Academic Credit	X <sup>1</sup> Undergraduate credit		X <sup>2</sup> Graduate credit

### Fall 2010 Course List

#### Science Courses

- Introduction to Ecology<sup>1,2</sup> Dr Elli Groner
- Introduction to Sustainable Agriculture<sup>1</sup> Dr Elaine Solowey
- Alternative Energy Science<sup>1,2</sup> Dr Tareq Abu Hamed

#### Policy and Social Science Courses

- Society and Environment<sup>1,2</sup> Dr Clive Lipchin, Dr Uri Gordon
- Issues in Environmental Ethics<sup>1,2</sup> Dr. Uri Gordon
- Environmental Education: From Theory to Practice<sup>1,2</sup> Dr Hanan Ginat
- Archeology and Human Ecology<sup>1,2</sup> Dr Uzi Avner
- Introduction to Environmental Policy<sup>1,2</sup> Dr Daniel Orenstein
- Peace-building and Environmental Leadership Seminar (PELS). Michelle Shachar, Dr Uri Gordon (Not for credit)

#### Interdisciplinary Courses

- Research Methodologies<sup>1</sup> Dr Clive Lipchin
- Eco-Health<sup>1,2</sup> Dr Nadav Davidovitch
- Climate Change<sup>1,2</sup> Dr Daniel Orenstein

### Spring 2011 Course List

#### Science Courses

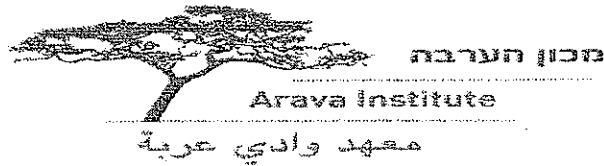
- Ecology of the Arava<sup>1</sup> Dr Elli Groner
- Environmental Biology<sup>1,2</sup> Dr Gabi Banet
- Introduction to Earth Science<sup>1,2</sup> Dr Hanan Ginat
- Bio Energy.<sup>1</sup> Dr Ilan Stavi
- Introduction to Environmental Science<sup>1,2</sup> Dr Shmuel Brenner

#### Policy and Social Science Courses

- Introduction to Environmental Economics.<sup>1,2</sup> Prof. Nir Becker, David Lehrer
- Environmental Politics<sup>1,2</sup> Dr Uri Gordon
- Environmental Philosophy<sup>1</sup> Dr Uri Gordon
- The Basics of Organic Food production<sup>1</sup> Dr Elaine Solowey

#### Interdisciplinary Courses

- Introduction to Energy Policy and Management<sup>1,2</sup> Dr. Tareq Abuhamed
- Directed Research and Independent Study in the Environment<sup>1</sup> Dr Clive Lipchin
- Water Management in the Middle East<sup>1,2</sup> Dr Clive Lipchin
- Introduction to Statistics for the Social Sciences<sup>2</sup> Dr Elli Groner



# Alternative Energy Science

Dr. Tareq Abu Hamed

Fall semester, 3 weekly lecture hours, 3 Credits,

## Abstract

Modern society relies on stable, readily available energy supplies. Renewable energy is an increasingly important component of the new energy mix. The course covers history, utilization and storage for renewable technologies such as wind, solar, biomass, fuel cells and hybrid systems. The course also touches upon the environmental consequences of energy conversion and how renewable energy can reduce air pollution and global climate change.

## Course Objectives and goals

- I. Understand the utilization and storage for renewable technologies such as wind, solar, biomass, fuel cells and hybrid systems and for more conventional fossil fuel-based technologies.
- II. Understand the environmental consequences of energy conversion and how renewable energy can reduce air pollution and global climate change.
- III. Understand and evaluate the regional environmental problems and the role of the renewable energy in solving these problems.

## Course structure

This course will focus on new developments in renewable energy technologies. There will be 13 course sessions of 3-hrs. each. The program is based on lectures, site visits, home works and discussion periods.

## Grading

The final grade will be based on classroom participation (20%), midterm exam (20%) final exam (40%) and a home works (20%).

## **Course outline**

**Lesson 1. Introduction to energy basics:** Energy - where to get it from, how to use it efficiently, and how to reduce negative environmental impacts from its production, conversion, distribution and use.

*Readings: Boyle, G., Renewable Energy: Power for Sustainable Future, Oxford University Press Inc. New York, 2004. Chapter 1.*

## **Lesson 2. World Energy and world related green gas emissions**

This lecture will cover the both traditional and renewable energy sources and the green gas emissions generated from the use of these energy sources in the world and the region.

*Readings: Tester, J. W., E. M. Drake, M. W. Golay, M. J. Driscoll, and W. A. Peters. Sustainable Energy: Choosing Among Options. Cambridge, MA: MIT Press, 2005. Chapter 2.*

## **Lesson 3. Renewable Energy**

This unit will cover an introduction of the key renewable energy sources for sustainable energy systems. The history of each energy source will also be covered.

*Readings: Tester, J. W., E. M. Drake, M. W. Golay, M. J. Driscoll, and W. A. Peters. Sustainable Energy: Choosing Among Options. Cambridge, MA: MIT Press, 2005. Chapter 9.*

## **Lesson 4. Biomass**

This lecture will review the use of agricultural crops and biomass wastes in the production of alternative fuels.

*Readings: Tester, J. W., E. M. Drake, M. W. Golay, M. J. Driscoll, and W. A. Peters. Sustainable Energy: Choosing Among Options. Cambridge, MA: MIT Press, 2005. Chapter 10.*

## **Lesson 5. Wind**

This lecture will outline the principles of wind turbine and; will review the process of electricity generation and supply to the grid (wind farms).

*Readings: Tester, J. W., E. M. Drake, M. W. Golay, M. J. Driscoll, and W. A. Peters. Sustainable Energy: Choosing Among Options. Cambridge, MA: MIT Press, 2005. Chapter 15.*

## **Lesson 6. Geothermal**

This lecture will cover the uses of geothermal energy and the geothermal power plants.

*Readings: Tester, J. W., E. M. Drake, M. W. Golay, M. J. Driscoll, and W. A. Peters. Sustainable Energy: Choosing Among Options. Cambridge, MA: MIT Press, 2005. Chapter 11.*

## **Lesson 7. Solar energy and Photovoltaics**

This lecture will discuss the need of solar energy in the world and the region. Also will examines the basics of converting sunlight into electricity; the behavior of solar cells; cell properties; system components; applications; grid connection; and applications. Experimental work will be carried out at the alpha site where there are operating PV systems.

*Readings: Boyle, G., Renewable Energy: Power for Sustainable Future, Oxford University Press Inc. New York, 2004. Chapter 3.*

*Tester, J. W., E. M. Drake, M. W. Golay, M. J. Driscoll, and W. A. Peters. Sustainable Energy: Choosing Among Options. Cambridge, MA: MIT Press, 2005. Chapter 13.*

**Lesson 8. Solar energy: solar thermal:** This component reviews the technologies and applications of solar thermal energy.

*Readings: Boyle, G., Renewable Energy: Power for Sustainable Future, Oxford University Press Inc. New York, 2004. Chapter 2.*

## **Lesson 9. Energy Conversion in Organisms**

Basic concepts on plants as terrestrial organisms, and alga as aquatic organisms.

Basic concepts on photosynthesis- conversion of light energy to chemical energy.

Productivities of various plants/alga, conversion ratio of solar energy.

Plants/alga as a source for energy- advantages and weaknesses of each.

The 3 main components of the cell and their energetic value.

What are the different sources for biofuels, and their different products.

*Readings: Julia Farber Renewable energy policy project. 2004.*

<http://www.repp.org/bioenergy/index.html>

### **Lesson 10. Bioenergy**

Energy plants: examples of uses: Sugar cane, Yatrofa, Sugar beet, sweet sorghum and various grasses,

Alga: examples of uses: biodiesel from power plants and cement factories, biomass fermentation. Different bioreactors.

Biodiesel: procession and final product. Advantages and weaknesses.

Ethanol/methane: procession and final product. Advantages and weaknesses.

Whole biomass: procession and final product. Combustion and degradation to sugars. Advantages and weaknesses.

Economic considerations.

Readings: Julia Farber Renewable energy policy project, 2004.

<http://www.repp.org/bioenergy/index.html>

**Lesson 11. Solar Fuels and Solar energy in Israel:** This lecture will cover the technologies of producing solar fuels. The second part of the lecture will focus on the Israeli technologies in solar applications and the research institutes in the region.

*Readings: J. Solar Energy Engineering 126 (3), 2004.*

C. Wieckert, C., Frommherz, U., Kräupl, S., Guillot, E., Olalde, G., Epstein, M., Santén, S., Osinga, T. and Steinfeld A. 2007. A 300 kW Solar Chemical Pilot Plant for the Carbothermic Production of Zinc. J. Sol. Energy Eng. 129. Pp. 190.

**Lesson 12. Field trip to the regional institutions or power plants.**

**Lesson 13. Energy storage, Fuel cells and hydrogen:** this lecture will cover the energy storage technologies, the production and storage methods of hydrogen and the principles and applications of the fuel cells.

*Readings: Tester, J. W., E. M. Drake, M. W. Golay, M. J. Driscoll, and W. A. Peters. Sustainable Energy: Choosing Among Options. Cambridge, MA: MIT Press, 2005. Chapter 16.*

### **Recommended readings**

1. International Energy Agency. Worldwide Trends in Energy Use and Efficiency- *Key Insights from IEA Indicator Analysis 2008.*
  2. Twiddel J. and Weir, T., 2006, Renewable Energy Resources. Franchis & Tylor, NY, USA, Chap. 1.
  3. Campbell, K.M. and Price, J., 2008, The Global Politics of Energy. THE Aspen Institute, Washington DC, USA. Chap.1 and 6.
- Other recommended readings will be provided during the course

# Environment and Society

Dr. Uri Gordon, Dr. Clive Lipchin, Fall 2009/10  
uri.gordon@arava.org, clivearava@gmail.com

TA: Abra Berkowitz, abraberkowitz@gmail.com

This is an introductory course to the environmental social sciences. Students will acquire knowledge of central theories and approaches in the social sciences, and of their application to environmental issues. A special emphasis is given to the interaction between social structure, technology and ideology in shaping environmental changes and responses to them.

## Grading:

Participation: 15%  
Midterm task: 40%  
Final Exam: 45%

## Course texts:

Tal, A. (2002). Pollution in a Promised Land: An Environmental History of Israel.  
University of California Press

Van Deveer, D. & C. Pierce (2003). The Environmental Ethics and Policy Book.  
Thomson Wadsworth Press

Buttel, F., A. Gijswijt, P. Dickens and R. Dunlap (Eds., 2002), Sociological Theory and the Environment. Rowman & Littlefield

## Lectures and readings:

**1. Course intro (Uri Gordon, Clive Lipchin) 21 October**

**2. Rudiments of Environmental Sociology (Uri Gordon) 28<sup>th</sup> October**

### Required:

- Buttel ch.1 and 15
- G. Hardin, "The Tragedy of the Commons", in K. Conca, *Green Planet Blues*

**3. Ecological modernization and Risk (Uri Gordon) 04 November**

### Required:

- Buttel ch.13
- Wynne, B., Risk and Environment as Legitimatory Discourses of Technology: Reflexivity Inside Out? *Current Sociology*, Vol. 50, No. 3, 459-477 (2002)

### Reccomended:

- Buttel ch.11



#### **4. Marxism and ecology (Uri Gordon) 11 Nov**

Required:

- Buttel ch.3
- J. O'Connor, "The Second Contradiction of Capitalism", in T. Benton, The Greening of Marxism

Recommended:

- T. Benton, "Marxism and Natural limits: An Ecological Critique and Reconstruction", in T. Benton, The Greening of Marxism

#### **5. Environmental Justice: Israel and its Arab minority (Uri Gordon) 18 Nov**

Required:

- Tal ch. 10
- Adva Center (2006), "Invisible Citizens Israel Government Policy Toward the Negev Bedouin". *Orbitfiles*
- Mealem, I. and Y. Garb (2008) "The exposure of Bedouin women to waste related hazards", *Women and Environments* (Fall/Winter).

Recommended:

- Vandever: 34-37, 550-555
- The Regional Council for the Unrecognized Villages in the Negev and the Arab Association for Human Rights (2003) "The Unrecognized Villages in the Negev: Update 2003" Submission to the UN Committee on Economic, Social and Cultural Rights.
- Ramat Hovav: A Survey of Risks. Unpublished manuscript.
- Articles from Haaretz Daily Newspaper:
  - "Civil Solutions for the Bedouin", 24/06/2004
  - "Jewish Communities Planned to Block Bedouin Expansion", 06/06/2004
  - "Study: Ramat Hovav has Double the Average Number of Birth Defects and Cancer", 06/01/2004

#### **6. Population planning and environmental impacts in Israel (Clive Lipchin) 02 Dec**

Required:

- Garb, Y. Population Dynamics and Sustainability in the Israeli Context: Navigating between Demographic Warfare and Malthusianism
- Orenstein, D.E. (2004). Population Growth and Environmental Impact: Ideology and Academic Discourse in Israel. Population and Environment 26(1):41-60.

Recommended:

- Van Deveer pp 389-397; 402-414

## **7. The Politics of technology (Uri Gordon) 09 Dec**

### Required:

- L. Winner (1986), The Whale and the Reactor, ch.1-2

### Recommended:

- ETC Group (2007) Commodifying Nature's Last Straw? Extreme Genetic Engineering and the Post-Petroleum Sugar Economy. Online: [http://www.etcgroup.org/upload/publication/pdf\\_file/703](http://www.etcgroup.org/upload/publication/pdf_file/703)

## **8. Techno-fixes: Peak Oil and Desalination (Clive Lipchin) 16 Dec**

Readings TBA

## **9. Religion, ideology and the environment (Clive Lipchin) 30 Dec**

### Required:

- Tal, A. "Zionism's environmental ethic and its influence on Israel's environmental history". Environmental History 13(2)
- Vandevier pp.43-52
- Gerstenfeld, M. (2001). "Zionism and the Environment." Midstream Zionism 2.12

### Recommended:

- Tal ch.2
- Vandevier pp. 52-99
- De-Shalit, A. and M. Talias (1994) Green or Blue and White? Environmental controversies in Israel. Environmental Politics 3(2) pp.273 - 294

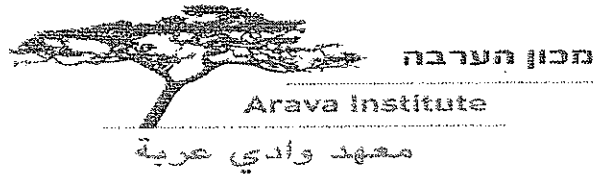
## **10. Environmental social movements (Uri Gordon) 06 Jan**

### Required:

- TBA
- Plows, A., D. Wall and B. Doherty (2004), Covert repertoires: ecotage in the UK. Social Movement Studies 3(2):199-219

## **11. From Competition to Cooperation (Uri Gordon, Clive Lipchin) 13 Jan**

Readings TBA



# Archeology and Human Ecology

Dr Uzi Avner

3 academic hours weekly 3 credits

## Course description

The aim of the course is to study the attitude of the desert's past societies towards their environment and the nature of utilizing it- thereby to examine our own relations with this expanding, fragile environment. We'll first examine the environmental conditions of the southern Arava and the Eilat region, which both discouraged and encouraged living here. Through the archaeological remains of the Southern Negev, Southern Jordan and Sinai, we'll study the material and spiritual culture of the desert people. These include the emergence of animal husbandry and agriculture in the desert (6th millennium B.C.), the advanced agriculture and water management of later periods (Nabatean to early Islamic), the history of copper and gold production in the region (5000 B.C. to 1300 A.D.), and a variety of types of cult and burial sites (6000 B.C. and later). We'll explore the connection between material and spiritual cultures, the role of people's ideology in their attitude towards the desert environment, and its relevance to our own land-use of the desert.

## Students' Requirements and Grading:

The course includes 10 weekly lectures (3 hours each, supported by literature and slide presentations), and 3 field trips (2 on a Friday). Grading will be based on the following elements: participation in class and field trips- 30%, mid-term assignments- 20% and a final exam- 50%.

## Course Schedule & Reading

Class 1. Introduction: Ecology of human subsistence in the desert, difficulties and attractions; the settlement pattern in the desert.

- Ezcurra E. (ed). 2006. *Global Desert Outlook*. Nairobi. 2-26.
- Meir, I., Y. Etzion and D. Fainman. ND. *Energy Aspects of Design in Arid Zones*. Sede Boqer. 1-10.
- S. Collins. 1999. Heat Related Illnesses. In J. Barry. (ed). *Proceeding of the Wilderness medical Society Conference. Tucson Arizona, October 1999*.

Class 2. Ancient agricultural settlement in 'Uvda Valley (6th-3rd millennia B.C.).

- Avner, U. 2002. Studies in the Material and Spiritual Culture of the Negev and Sinai

Population During the 6th to 3rd Millennia B.C. Ch. 2 (Agricultural settlement).

Class 3. Predator traps and "Desert Kites".

- Meshel, Z. 2000. Desert kites in Sinai and the Southern Negev. In, Z. Meshel. Sinai, Excavations and Studies. BAR international Series 879. 121-142.
- Pervolotsky, A. and D. Baharav, 1991. The Distribution of Desert Kites in the Eastern Sinai and Sub-regional Carrying Capacity: an Ecological Perspective. *Journal of Arid Environment* 20:239-249.

Class 4. Advanced agriculture in the 'Araba Valley (200. B.C-1000. A.D.).

- Meshel, Z. 1993. Yotvata. In E. Stern (ed.), *The New Encyclopedia of Archaeological Excavations in the Holy Land IV*. Pp.1517-1520. Jerusalem.
- Avner, U. 2002. Ancient Water Management in the Southern Negev. *ARAM* 13-14:389-407.
- Whitcomb, D. 2006. Land Behind Aqaba: the Wadi Araba During the Early Islamic Period. In P. Bienkowski & K Galor (eds). *Crossing the Rift Valley Oxford*. 239-242.

Class 5. Field trip to Yotvata Oasis and Samar.

Class 6. Copper production in the 'Araba Valley (5000 B.C-1000 A.D.)

- Rothenberg, B. 1999a. Archaeo-Metallurgical Researches in the Southern Arabah 1959-1990. Part 1: Late Pottery Neolithic to Early Bronze IV. *PEQ* 131:149-175.
- Avner, U. 2002. Studies..... Ch. 3 (Copper production)

Class 7. Copper production (continuation); gold production near Eilat.

- Rothenberg, B. 1999b. Archaeo-Metallurgical Researches in the Southern Arabah 1959-1990. Part 2: Egyptian New Kingdom (Ramesside) to Early Islam. *PEQ* 131:68-89.
- Hauptmann A. 2006. Mining Archaeology and Archaeometallurgy in the Wadi Araba: The Mining Districts of Faynan and Timna. In P. Bienkowski & K Galor (eds). *Crossing the Rift Valley Oxford*. 143-150. 125-134.
- Gilat, A., M. Shirav, R. Bogoch, L. Halicz, U. Avner and D. Nahlieli. 1993. Significance of Gold Exploitation in the Early Islamic Period, Israel. *Journal of Archaeological Science* 20:429-437.

Class 8. Faith and spirit in the desert: spiritual culture of the population (standing stones, open sanctuaries and burials).Field trip to Timna' Valley.

- Avner, U. 2002. Studies..... Ch. 4 (*Masseboth*).

Class 9. Field trip to Timna' Valley.

Class 10. Faith and spirit in the desert (continuation).

- Avner, U. 2002. Studies..... Ch. 5 (Open sanctuaries), Appendix 1 (burial).

Class 11. Ancient roads in the desert / Building in the desert, past and present.

- Jasmine, M. 2006. The Emergence and First Development of the Arabian Trade Across the Wadi Araba. In P. Bienkowski & K Galor (eds). *Crossing the Rift Valley Oxford*. 143-150.
- Avner, U. 2002. Studies..... Ch. 6 (Ancient roads).

Class 12. Field trip to 'Uvda Valley.

- Avner, U. 2006. Settlement Pattern in the 'Araba Valley and the Adjacent Desert Areas, a View from the Eilat Region. In P. Bienkowski & K Galor (eds). *Crossing the Rift Valley Oxford*. 51-74.
- Avner, U. 2008. Eilat Region. In, A. Stern (ed.). *The New Encyclopedia of Archaeological Excavation in the Holy Land*, Volume 5 (Supplementary). Jerusalem. 1704-1711.

Class 13. Summary: Settlement Pattern in the Desert reconsidered; The ancients' attitude toward the desert and nature in general (through ancient written sources), the "Biophilia" connection and the relevance of the ancients to our present and future.



## Introduction to Ecology

Dr. Elli Groner

3 academic hours, 2 classes of 1.5 hours

3 credits

### Course description

Students will be taught the basic terminology, principles and ideas of ecology. The course will introduce the basic ideas and history of the science, its evolution and links to other sciences. Subsequent lectures will examine these ideas looking at different ecological scales: individuals, populations, communities and ecosystems. Human ecological issues will also be discussed where relevant within the framework of the course.

### Grade components:

Final exam	40%
Mid-term exam	10%
Biodiversity project	20%
Quizzes, exercises, discussions	30%

### Reading, assignments, exercises & practical

Q	Reading quizzes	At the beginning of each class a question will be posed based on the reading set for the coming lesson. The reading is required to understand the lesson.
E	Exercise	Homework on the material already taught. This should be done in pairs and submitted the next week. The exercise allows students to practice the material that was taught.
D	Discussion	Discussion in class on the taught topic and human impact upon it
P	Practical	Hands-on demonstration of an example from the taught topic.
BP	Biodiversity project	Done in pairs, submitted as a paper and 10 min talk
MTE	Mid-term exam	Exam in week 6 on material from weeks 1-5
FE	Final exam	Exam on material from all the semester

### Textbooks for course

Ecology: Individuals, Populations and Communities / M. Begon, J. Harper, C. Townsend. Blackwell Science LTD, Oxford, UK

Ecology: Concepts and Applications / M. C. Molles Jr. 2002. McGraw-Hill Higher Education, NY, USA (2<sup>nd</sup> edition). Only for UG.



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**Schedule and readings:**

Week	Lecture	topic	Reading from Begon	Assignments
Week 1	1	Introduction		
	2	Evolution		P
Week 2	3	Evolution	6-9,22-27	D
	4	Behaviour		P
Week 3	5	Behaviour	364-368	
	6	Biodiversity		E
Week 4	7	Biodiversity	679-692	BP
	8	Populations		P
Week 5	9	Populations	224-234, 244-247	D
	10	Life history	147-154, 170-172, 526-530, 552-555, 581-589	
Week 6	11	Human impact		
	12	MTE		MTE
Week 7	13	LTER		
Week 8	14	Distribution	173-188, 601-610	P
	15	Distribution		E
Week 9	16	Competition	273-281, 287-290	D
	17	Competition		E
Week 10	18	Predation	369-374, 429-437, 482-489, 520-521	
Week 12	19	Food webs	730-748, 763-767, 773-774, 828-837, 838-846	D
	20	Ecosystem Ecology	100-122, 128-134, 744-769	D
Week 13	21	Landscape Ecology		E
	22	Biogeography	28-31, 48-59, 79-87, 941-952, 711-730	
Week 14	23	Desert Ecology		
	24	Student Presentations		BP

**Recommended Reading:**

Arava Institute for Environmental Studies (א"י) מכון הערבה ללימודי הסביבה

[www.arava.org](http://www.arava.org) e-mail: [info@arava.org](mailto:info@arava.org)

Kibbutz Ketura D.N. Eilat 88840 Israel

Tel. 072 8 6256610 Fax 072 8 6256634



- Evolution - Mark Ridley, Blackwell publishing
- Measuring biological diversity - Anne Magurran, Blackwell publishing
- Animal ecology - Charles Elton, new edition, University of Chicago press
- Human ecology – Basic concepts for sustainable development. Gerald G Marten. Earthscan Publishing, 2001.

Extra papers will be given throughout the semester according to the discussions.





## Introduction to Sustainable Agriculture

Dr Elaine Soloway

3 academic hours, 3 credits

### Course description

The course offers an overview of approaches to sustainable agriculture. In this course sustainable agriculture is compared to conventional agriculture and environmental impacts are discussed. Subjects include crop diversity, smart breeding, permaculture, biointensive agriculture, large scale organics, watersaving techniques, IPM and restoration ecology.

Students complete essay questions in an open book exam, complete a project of their choosing, take one field trip, and visit and evaluate crops in the experimental fields at Kibbutz Ketura.

Each week lectures will be composed of two sessions of one and a half hour lessons. The course description below describes the two sessions of each week.

### Text Book

*Small Steps Towards Abundance, Crops for A More Sustainable Agriculture* by Elaine Soloway.

### Grade components:

- |                                   |     |
|-----------------------------------|-----|
| • Final exam                      | 40% |
| • Mid-term exam                   | 10% |
| • Biodiversity project            | 25% |
| • Quizzes, exercises, discussions | 25% |

### Course schedule and reading:

#### Section One: The Foodweb In Danger.

#### **Lecture 1:**

**Problems of monocultural cropping systems.**

**The other lives involved in food production.**

Lecturer: Dr Elaine Soloway.

Readings:

Introduction and chapter one of the textbook.

*Betting the Farm* and *Billion Dollar Corn* from *The Last Harvest* by Paul Raeburn.



Handout: Green Revolution by Sharon Astyck.

**Lecture Two :**

**Agriculture and water.**

**Agricultural format and its influence on the rural landscape.**

Lecturer : Dr Elaine Solowey.

Readings:

Chapter two of textbook.

*The Desert Farming Experience* from *Mirage* by Russel Clemings.

*Margins* by Wendell Berry from *The Unsettling of America*.

**Lecture Three:**

**Comparing conventional agriculture and sustainable agriculture in commercial format.**

**Comparing conventional and sustainable systems by total harvest index.**

Lecturer : Dr Elaine Solowey

Readings:

Chapter three of text.

Wes Jackson/ *Prarie Restoration*-- explanation and overview.

Handout: The Ecology of Colony Collapse Disorder.

**Lecture Four:**

**Part 1: "Wild plants and Biodiversity" ( Guest lecturer)**

**Part 2: The crucial importance of in-crop diversity to agriculture.**

Lecturer : Dr Elaine Solowey.

Readings:

Chapter four of textbook.

*Seeds Imbued With Wildness* by Gary Nabhan from *Enduring Seeds*.

*Hijacking the Future* by Vandana Shiva from *Stolen Harvest*.

Section 2 Investing Agricultural Resources

**Lecture Five: The inexpert science of plant breeding.**

**Where do crop plants come from? The lessons of domestication.**

Lecturer : Dr Elaine Solowey.

Readings:

Chapter five of textbook.

*As Alike as Identical Twins* by Paul Raeburn from *The Last Harvest*.

*The Value of Biodiversity* from *Shattering* by Mooney and Fowler.

**Lecture Six:**

**Crop protective chemicals and their problems.**



מכון הערבה

Arava Institute

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**The problems of chemical fertilizers.**

Lecturer : Dr Elaine Solowey.

Readings:

Chapter six of textbook.

*The Causes of Desertification from The Threatening Desert* by Alan Granger.

Handout: The Bees Come Back in Southern France.

**Lecture Seven:**

**Desert permaculture.** (Guest lecturer)

**Permaculture and the rural landscape.**

Lecturer : Dr Elaine Solowey

Readings:

Chapter seven and eight of textbook.

Bill Mollison/ *Permaculture*-- explanation and overview.

Handout: Michael Pollan on Slow Food.

**Week Eight:**

**Field trip to Kibbutz Lotan.**

**Colony Collapse disorder and domestic honeybees.**

Lecturer : Dr Elaine Solowey.

Readings:

Chapter nine and ten of textbook..

*A Vision for the Future* from *Mirage* by Russel Clemmings.

Chapter 1-3 *A Spring Without Bees*.

Handout: Into the Future, Agriculture and Pollinating Insects.

Section 3 Wise Agriculture

**Lecture Nine:**

**Biomimicry in Agricultural formats.**

**Biometrics in plant breeding.**

Lecturer : Dr Elaine Solowey.

Readings:

Chapter ten and eleven of textbook.

*Biomimicry*-explanation and overview.

Essay, local examples of biomimicry.



**Lecture Ten:**

**Domestication protocols.**

**New crops and climate change.**

Lecturer : Dr Elaine Solowey.

Readings:

Chapter twelve and thirteen of textbook.

*Biometrics and Pedigreed Breeding* from *Return to Resistance* by Raoul Robinson.

**Lecture Eleven:**

**Integrated agriculture.**

**Smart breeding.**

Lecturer : Dr Elaine Solowey

Readings

*Wise Agriculture* from textbook.

*Afterword* from textbook.

*Towards a Perennial Agriculture* by E. M. Solowey.

**Lecture Twelve:**

**Presentations and projects.**

Each student will complete an approved project for this class.

Lecturer : Dr Elaine Solowey.

**Recommended Reading List**

Additional reading will be supplied from works by Vandana Shiva, Paul Raeburn, Gary Nabhan, Russel Clemings, Wendell Berry and Wes Jackson.

**Appendix 2**  
**Sample Faculty CVs**

## CURRICULUM VITAE

January 2008

**NAME:** SHMUEL BRENNER, PhD

**EXPERTISE:** ENVIRONMENTAL AND OCCUPATIONAL HEALTH,  
Air Pollution and Odors, Wastewater treatment, Hazardous  
Substances, Solid and Hazardous Waste, Ionizing and Non-  
Ionizing Radiation, Environmental Policy.

**OFFICE:** "GREEN ENTERPRISES" – ENVIRONMENTAL CONSULTING  
**Director**  
16 Israel Yeshayahu St.  
Herzlia 46803  
Tel/Fax. 09-9554232  
Cell: 052-8022081  
Email: shmubr@netvision.net.il

**Recent Places of Work:** **Bar Ilan University (2007)**  
Department of Geography  
Ramat Gan  
Israel

**Tel Aviv University (Until 2006)**  
Department of Geography  
P.O.B. 39040  
Ramat Aviv  
Tel Aviv 69978

**The Arava Institute for Environmental Studies**  
Kibbutz Ketura  
D.N. Eilat 88840

**Date and Place of Birth:** June 5, 1942, Jerusalem, Israel

**Military Service:** IDF (Israel Defense Force) 1964-1966

**Marital Status:** Married + 3

### 1st. EDUCATION

<b>Period of Study</b>	<b>Name and Address of School</b>	<b>Subject</b>	<b>Degree</b>	<b>Date</b>
1952 - 1959	Secondary School by the Hebrew University, Jerusalem	Mathematics + Physics	Matriculation	1959
1959 - 1962	Hebrew University, Jerusalem	Chemistry	BSc	1962

1962 - 1964	Hebrew University, Jerusalem	Organic Chemistry	MSc	1964
1966 - 1970	Hebrew University, Jerusalem	Organic Chemistry	PhD	1970

## B. FURTHER STUDIES

Period of Study	Name of University	Subject	Degree	Date
1970 - 1972	University of Arizona, Tucson, USA	Organic Chemistry	Postdoctoral Studies	1972

## C. ACADEMIC AND PROFESSIONAL EXPERIENCE

Period	Institution	Department	Function
1972-1976	Hebrew University, Jerusalem, Israel	Institute of Chemistry and the School for Overseas Students	Lecturer
1974	University of Louvain, Louvain-la-Neuve, Belgium	Laboratory of Prof. H.G. Viehe (Research in the chemistry of phosgene-immonium)	Visiting Scientist
1976-1978	University of California, Los Angeles, USA	Institute of Geophysics and Planetary Physics,	Visiting Scientist
1978-1979	Environmental Research Corporation, Los Angeles, California, USA	Global Geochemistry Division	Manager
1980-1984	Tel-Aviv University, Tel- Aviv, Israel	Research Institute for Environmental Health, Ministry of Health	Deputy Director
1984-1990	Tel-Aviv University, Tel Aviv, Israel	Research Institute for Environmental Health, Ministry of Health	<b>Director</b>
1984-1989	Sackler School of Medicine, Tel-Aviv University, Israel	Institute for Occupational Health	Teacher, Class C
1982-1991	Tel-Aviv University, Israel	Department of Geography	Teacher, Class B&C
1989- 2005	Sackler School of Medicine, Tel-Aviv University, Israel	Dept. of Epidemiology and Preventive Medicine	Senior Lecturer
1990-2000	<b>Ministry of the Environment*</b>		<b>Senior Deputy Director General</b>
1992-2006	Tel-Aviv University, Israel	Department of Geography	<b>Senior Lecturer</b>
2000-2002	Tel-Aviv University, Sackler School of Medicine and CLALIT Health Services	National Institute of Occupational & Environmental Health	<b>Head of Institute</b>

2000-	<b>"Green Enterprises"</b> (private)	Environmental Consulting	<b>General Director</b>
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2004-	<b>Arava Institute</b>		<b>Faculty Member</b>
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\* Head of the Israeli team for environmental issues for the Oslo peace talks (1995) and until 2000.

#### **E. ACADEMIC AND PROFESSIONAL AWARDS**

Year	Name of Institution	Award
1959-1962	Hebrew University, Jerusalem	Tuition and living stipend towards BSc
1962-1964	Hebrew University, Jerusalem	Tuition and living stipend towards MSc
1971	National Science Foundation	Stipend for 1971 at the International and Applied Chemistry Meeting in Boston, USA
1981	Geochemical Society, USA	Society's award for most outstanding paper in Organic Chemistry

#### **F. (i) MEMBERSHIP IN PROFESSIONAL SOCIETIES**

Year	Society	Country
1980	Israeli Society for Ecology and Environmental Quality Sciences	Israel
1986-1992	Air Pollution Control Association	U.S.A.
1990-	Israeli Organization for Radiation Protection	Israel
1990-	Association for the Fight Against Cancer	Israel
2000-	American Conference of Governmental Industrial Hygienists	U. S. A.
2000-	Society for Occupational and Environmental Health	U. S. A.

#### **F. (ii) MEMBERSHIP IN PROFESSIONAL COMMITTEES AND CONSULTATIONS**

Year	Society	Country
1990-1994	Member of the Board of Directors, Company for Environmental Quality Services	Israel
1998-2006	Member of the Board of Directors, Joint Environmental Mediation Service	Israel
2000-	Member of the Herzelia Municipality Environmental committee	Israel
2002- 2007	Member of the Board of Directors, MALRAZ, The Public Council For Prevention of Noise & Air Pollution	Israel

#### **G. CONSULTATIONS (EXAMPLES)**



- GOVERNMENT OF SINGAPOURE – MINISTRY OF INTERIOR
- MEXICO CITY – DEPT. OF ENVIRONMENT
- ISRAELI MINISTRY OF DEFENCE
- ISRAELI MINISTRY OF INTERIOR
- ISRAELI COMPANY FOR LIFE SCIENCES RESEARCH
- E.S. VARIOUS LAW OFFICES (ENVIRONMENTAL TESTIMONIES)
- ESPY & BAREKET LANDFILL
- P.Y LTD, ISRAEL
- THE TRUMAN ISTITUTE (HUJ)
- ISRAEL ELECTRIC CO.
- ECOZONE LTD, ISRAEL
- THE GREEN ENVIRONMENT LTD
- AFULA CITY
- NATO ORGANIZATION
- ACHLA NGO (SOIL REMEDIATION)

## LIST OF SCIENTIFIC PUBLICATIONS

### B.1 ARTICLES

1. J. Klein, S. Brenner  
The Acyloin Reaction of Glycol Esters  
Israel J.Chem. 1:235, 1965.
2. J. Klein, S. Brenner  
Metalation Reaction I. Formation and Charge Distribution in  
Conjugated Propargylic Dianions  
J. Am. Chem. Soc., 91:3094-6, 1969.
3. J. Klein, S. Brenner  
Metalation Reactions II. Preparation of Bis (trimethylsilyl)  
Allens from Enynes  
J. Organometal. Chem., 18:291-8, 1969.
4. J. Klein, S. Brenner  
1, 3-Proton Transfer in DMSO without Hydrogen Exchange with  
the Solvent.  
Chem. Comm., 1020-1, 1969.
5. S. Brenner, J. Klein  
Metalation Reaction IV. The Metalation of 1,5-Dipheny Pentadienes  
Israel J. Chem., 7:735-40, 1969.
6. J. Klein, S. Brenner  
Metalation Reactions VI. Rearrangement of a Propargylic Anion  
Tetrahedron, 26:2345-52, 1970.

7. R.B. Bates, S. Brenner, W.S. Deines, D.A. McCombs, D.E. Potter  
1, 6-Sigmatropic Hydrogen Shifts in Pentadienyl Anions. Relative  
Stabilities of Pentadienyl Anions.  
J. Am. Chem. Soc., 92:6345-6, 1970.
8. J. Klein, S. Brenner  
Metalation Reactions VIII. Metalation of 1, 4-Enynes and  
Protonation of Their Anions.  
Tetrahedron, 26:5807-19, 1970.
9. J. Klein, S. Brenner  
Metalation Reactions IX. Evidence for the Sequence of Reactions  
of Dilithiophenyl-1-1-propyne  
J. Org. Chem., 36:1319, 1971.

10. J. Klein, S. Brenner, A. Medlik  
Metalation Reactions XII. Alkylation of Pentenynyllithium Derivatives  
Israel J. Chem., 9:177-84, 1971.
11. R.B. Bates, S. Brenner, C.M. Cole  
3-Vinylpentadienyl Anions. Rearrangement of 3-Vinylpentadienyl  
Anion to 2-Ethylcycloheptadienyl Anion  
J. Am. Chem. Soc., 94:2130-2, 1972.
12. R.B. Bates, S. Brenner, B.I. Mayall  
Nonatetraenyl Anions. The 6-Vinylcycloheptadienyl-Nonatetraenyl  
Anion Rearrangement.  
J. Am. Chem. Soc., 94:4765-7, 1972.
13. J.Y. Becker, S. Brenner, J. Klein  
Metalation Reactions XIII. Effect of Metalation Agent on the  
Metalation of Acetylenes  
Israel J. Chem. 10:827-33, 1972.
14. R.B. Bates, S. Brenner, C.M. Cole, D.A. Davidson, G.D. Forsythe,  
D.A. MaCombs, S.A. Roth  
Delocalized Carbanions. CMR Spectra Charge Distribution and  
Reaction Sites.  
J. Am. Chem. Soc., 95:926-7, 1973.
15. E. Dunkelblum, S. Brenner  
Addition and Metalation Reactions of Small Ring Olefinic  
Hydrocarbons with Butyllithium  
Tetrahedron Lett., 669-72, 1973.
16. S. Brenner, E. Dunkelblum  
Nucleophilic Aromatic Substitution - A Route to the Naphtalene  
System from ( Cyclopropylstyrene  
Tetrahedron Lett., 2487-90, 2973.
17. S. Brenner, M. Bovete  
The Monometalation of 3-Butenenitrile  
Tetrahedron Lett., 1377-80, 1974.
18. M. Barfield, R.B. Bates, W.A. Beavers, I.R. Blacksberg, S. Brenner,  
B.I. Mayall, C.S. MacCulloh  
Homocyclooctatetraene Dianions. Preparation by Dimetalation: Geometry.  
J. Am. Chem. Soc., 97:900-1, 1979.
19. S. Brenner, M. Bovete  
Controlled Reactions of Activated Nitriles with Methyllithium and  
Methyl-iodide, A New Displacement of CN from a Saturated Carbon  
Tetrahedron, 31:153-8, 1975.

20. S. Brenner, B. Alterovitch  
Polymethylations of Bis (Cyanomethyl) Benzenes  
Tetrahedron, 32:487-91, 1976.
21. S. Brenner, H.G. Viehe  
1,3-Bisphenylmalondiamidine. Exclusive C-or N-Methylation  
of its Anion.  
Tetrahedron Lett., 1617-20, 1976.
22. S. Brenner, R. Ikan, N.A. Agron, A. Nissenbaum  
Hula Basin Peats: Chemical and Geochemical Aspects  
Soil Sci., 125:227-32, 1978.
23. B.R.T. Simoneit, S. Brenner, K.T. Peters, I.R. Kaplan  
Thermal Alteration of Crataceous Black shale by Basaltic Intrusion  
at DSDP Site 41-368 in the Eastern Atlantic Ocean.  
Nature, 273:501-4, 1978.
24. K.E. Peters, B.R.T. Simoneit, S. Brenner, I.R. Kaplan, D.F. Oltz (Ed.)  
Vitrinite Reflectance - Temperature Determinations for Intruded  
Cretaceous Black Shale in the Eastern Atlantic.  
Symp. Low Temperature Metamorphism of Kerogen and Clay Minerals  
Pacific Section, SEPM, 53-58, 1979.
25. B.R.T. Simoneit, M.A. Mazurek, S. Brenner, P. Crisp  
Organic Geochemistry of Recent Sediment from Guaymas Basin,  
Gulf of California.  
Deep Sea Res. m 26A:879-91, 1979.
26. P. Crisp, S. Brenner, M.I. Venkatesan, E. Ruth, I.R. Kaplan  
Organic Chemical Characterization of Sediments from Particle Traps  
in San Nicolas, Santa Barbara, Santa Monica, and San Pedro Basins,  
California.  
Geochim. and Cosmochim. Acta, 43:1791-1801, 1979.
27. R. Ikan, V. Ginzburg, P. Ioselis, D. Hoffer, S. Brenner, J. Klein  
Liquefaction of Hula Peat.  
Israel J. Tech., 17:29-35, 1979.
28. M.I. Venkatesan, S. Brenner, E. Ruth, J. Bonilla, I.R. Kaplan  
Hydrocarbons in Age Dated Sediment Cores from two Basins in the  
Southern California Bight  
Geochim. and Cosmochim. Acta, 44:789-802, 1980.

29. M.I. Venkatesan, M. Sandstrom, S. Brenner, E. Ruth, J. Bonilla, I.R. Kaplan, W.E. Reed  
Organic Geochemistry of Surficial Sediments from the Eastern Bering Sea: Oceanography and Resources, ol. 1, U.S. Dept. of Commerce, U.M.P.A., pp. 389-409, 1981.
30. B.R.T. Simoneit, S. Brenner, K.E. Kaplan  
Thermal Alteration of Greasy Black Shale by Diabase Intrusions in the Eastern Atlantic. II: Effects of Bitumen and Kerogen  
Geochim and Cosmochim. Acta, 45:1581-1602, (1981).
31. S. Brenner and Z. Anavi  
Review of the Israeli Technical Committee for Asbestos  
Am. J. Ind. Med. 10, 527-532, (1986).
32. S. Altshuller, S. Brenner  
The Connection between Total Suspended Particulates (TSP) and Soiling Index (SI) in Tel-Aviv Area.  
Biosphere 17/8, May 1978 (in Hebrew).
33. A.I. Goren, S. Brenner, S. Hellman  
Cross-Sectional Health Study in Polluted and Non Polluted Agricultural Settlements in Israel.  
Environ. Res., 46, 107-119, (1988).
34. E. Ganor, S. Brenner, S. Altshuller, J. Gabbay, H.A. Foner  
Vanadium and Nickel as Indicators of Power Plant Pollution During the Summer Months in the Metropolitan Area of Tel-Aviv, Israel.  
Water & Soil Poll., 42, 241-252, (1988).
35. J. Gabbay, O. Bergerson, N. Levi, S. Brenner, I. Eli  
The Effect of Ionization on Reduction of Microbial Air Pollution in the Dental Clinic.  
Environ. Res., 52, 99-106 (1990).
36. S. Brenner, R. Haimovitch  
Methods for Evaluating Hazards in Chemical Plants (Hebrew, abstract in English).  
J. Assoc. Eng. Arch. in Israel, 10:23-25, December 1989.
37. A. I. Goren, S. Hellman, S. Brenner, N. Egoz, S. Rishpon  
Prevalence of Respiratory Conditions Among Schoolchildren Exposed to Different Levels of Air Pollutants in the Haifa Bay Area, Israel.  
Environ. Health Perspect. 89, 225-231, Nov. (1990).

38. M. Rosenberg, J. Pshigorski, J. Eli, R. Bar-Ness, J. Gelemtner, S. Brenner, J. Gabbay.  
Halitosis Measurement by Industrial Sulphide Monitor.  
J. of Periodontology, 62 (8) 487-489, (1991).
39. S. Brenner, E. Ganor, Z. Anavi  
Asbestos Fibers in the Ambient Air of Israel  
Environ. Management and Health, 1 (2) 13-16 (1990).
40. E. Ganor, H.A. Foner, S. Brenner, E. Ne'eman, N. Lavi  
The Chemical Composition of Aerosols Settling in Israel Following  
Dust Storms.  
Atmospheric Environment Vol. 25 A, No.12, pp. 2665-2670,(1991).
41. E. Ganor, A. Fischbein, S. Brenner, P. Froom  
Extreme Airborne Asbestos Concentrations in a Public Building.  
British J. of Industrial Medicine, 49, 486-488 (1992).
42. A.I.Goren, J.R. Goldsmith, S. Hellman, S. Brenner  
Follow-up of Schoolchildren in the Vicinity of a Coal-Fired Power  
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- 2009 BEN GURION UNIVERSITY OF THE NEGEV  
**Post-doctoral Researcher**  
UNESCO-funded project at the Swiss Institute for Dryland Environmental Research. Developed methods for Biodiversity and Ecosystem Services Assessments at Biosphere Reserves, in fulfilment of the mandate of the Madrid Action Plan of UNESCO's Man and Biosphere program. Work included meetings with officials, synthesis of extensive literature, development of assessment procedures and production of a 15,000-word report.
- 2006-2007 TEL-AVIV UNIVERSITY  
**Post-doctoral Fellow**  
Research and teaching at the Porter School of Environmental Studies, Tel-Aviv University. Taught course on Global Environmental Politics. Research on activist networks in Israel and complex systems theory. Re-edited thesis for publication.
- 2003-2005 UNIVERSITY OF OXFORD  
**Graduate Tutor in Politics**  
Provided tutorials for 3-4 students each term at Mansfield, Hertford and St. Hilda's colleges. Papers taught: Theory of Politics (203), Classical Political Thought (215), and Marxism (217).

## HIGHER EDUCATION

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- 2001-2005 D.PHIL., POLITICS – UNIVERSITY OF OXFORD  
Thesis title: *Anarchism and Political Theory: Contemporary Problems*  
Supervisor: Prof. Michael Freeden  
Examiners: Dr. Marc Stears (Oxon) and Dr. Benjamin Franks (Glasgow)
- 1998-2000 B.A., POLITICS – TEL-AVIV UNIVERSITY  
*Magna cum Laude* in politics as a single major, with minors in Geography and Social Sciences.

## PUBLICATIONS

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### Books

- 2008 *Anarchy Alive! Anti-authoritarian Politics from Practice to Theory* (London: Pluto Press / Ann Arbor, MI: University of Michigan Press)
- In German – *Hier und Jetzt!* (Berlin: Edition Nautilus, 2010)
  - In French – *Vive l'Anarchie!* (Lyon: Atelier de Creation Libertaire, 2011)

### Journal Articles

- 2010 Against the Wall: Anarchist mobilisation in the Israeli-Palestinian conflict. *Peace and Change* 35.3
- 2009 Anarchism and the Politics of Technology. *WorkingUSA* 12.3
- Facts on the Ground (Editorial). *Anarchist Studies* 17.1
- 2007 Anarchism Reloaded. *Journal of Political Ideologies* 12.1
- Israeli Anarchism: Statist dilemmas and the dynamics of joint struggle. *Anarchist Studies* 15.1
- In French: Anarchisme, nationalisme et nouveaux États, *Refractions* 19
  - In Italian: L'anarchismo in Israele, *A Rivista* 334
  - In German: Anarchismus in Israel/Palästina. In *Barrieren durchbrechen!*, ed. Sebastian Kalicha. Berlin: Graswurzelrevolution
- 2006 After the War (Editorial). *Anarchist Studies* 14.2
- Avapxia*: What did the Greeks actually say? *Anarchist Studies* 14.1

### Book Chapters

- 2010 Olive Green: Environment, militarism and the IDF. In *Israel's Environmental History*, eds. C. Miller, A. Tal and D. Orenstein. Pittsburgh, PA: Univ. of Pittsburgh Press
- Anarchist Economics in Practice. In *An Economy of Sustainability: Anarchist Economics*, eds. A. J. Nocella, II and D. Shannon. Oakland: AK Press
- Israel, Palestine and Anarchist Dilemmas. In *Anarchism: A Documentary History of Libertarian Ideas, Vol.3: The Anarchist Current, 1974-2007*, ed. R. Graham. Montreal: Black Rose books
- 2009 Utopia in Contemporary Anarchism. In *Anarchism and Utopianism*, eds. L. Davis and R. Kinna. Manchester: Manchester University Press
- Dark Tidings: Anarchist Politics in the Age of Collapse. In *Contemporary Anarchist Studies*, eds. R. Amster, A. DeLeon, L. Fernandez, A. J. Nocella, II and D. Shannon. London: Routledge
- Power and Anarchy: In/equality + in/visibility in autonomous organizing. In *New Perspectives on Anarchism*, eds. N. Jun and S. Wahl. Lanham, MD: Lexington
- Foreword to J. Horrox, *A Living Revolution: Anarchism in the Kibbutz movement*. Oakland: AK Press
- 2006 Practising Anarchist Theory: Towards a participatory political philosophy, in Stephen Shukaitis and David Graeber (eds.), *Constituent Imagination* (Edinburgh: AK Press).

## Encyclopaedia Entries

- 2008 Anarchism in Palestine and Israel; Anarchists Against the Wall; Bob Black; CrimethInc.; Eco-Anarchism; Insurrectionary Anarchism; Post-left Anarchy. In *The International Encyclopaedia of Revolution and Protest*, ed. I. Ness. Malden, MA: Wiley-Blackwell

## Book Reviews

- 2010 David Graeber, *Direct Action: An ethnography*. *Anarchist Studies* 18.2
- 2009 James Herod, *Getting Free*. *Anarchist Studies* 17.1
- 2006 Rudolf Rocker, *The London Years*; William J. Fishman, *East End Jewish Radicals: 1875-1914*. *Anarchist Studies* 14.2
- 2004 Paul Kingsnorth, *One No, Many Yesses*; Notes from Nowhere (eds.), *We Are Everywhere. Perspectives on Anarchist Theory* 8.1
- 2003 Michael Albert, *The Trajectory of Change*; Starhawk, *Webs of Power*; John Holloway, *Change the World without Taking Power*. *The New Formulation* 2.1

## RECENT CONFERENCE PAPERS, PRESENTATIONS AND PANELS

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- 2010 *Assimilation of the Ecosystem Services paradigm into the planning and evaluation of Biosphere Reserves*. 38th conference of the Israel Society of Ecology and Environmental Science
- 2009 *Anarchists Against the Wall – Political ethnography and assessment of achievements*. Israel Political Science Association conference
- Anarchists Against the Wall – Political ethnography and assessment of achievements*. 40th conference of the Israeli Sociological Society, Rishon LeZion Academic College
- 2008 *Vanguard, Rear Guard and Avant-Garde* – First Anarchist Studies Network conference, Loughborough University
- Anarchist Politics in the Age of Collapse – Earth First! Summer Gathering*, Norfolk, UK
- 2007 *Power and Anarchy: Inequality and invisibility in Activist Networks* – Civil Rights, Liberties and Disobedience conference, Loughborough University
- Anarchism and Violence Revisited* – British International Studies Association conference, University of Cork
- 2006 *Leadership and Power in activist networks* – “Leadership in Civil Society” seminar, Tel-Aviv University
- Anarchism, Nationalism and Israeli-Palestinian Peace* – “Social and Political Mobilization in the Israeli-Palestinian Conflict” conference, Centre de recherche français de Jérusalem
- Anarchism as a political culture* – Sociological-Anthropological forum, Beer-Sheva University.

## OTHER EMPLOYMENT

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- 2005            **CORPORATE WATCH, Oxford – Associate Editor**  
Contract work for a research organisation spotlighting the social and environmental impacts of multinational corporations. Guest editor of two CW newsletters; copy editor of the research publication on corporate involvement in and around the 2005 G8 summit.
- 2002-2004      **MANSFIELD COLLEGE, Oxford – Assistant Junior Dean**  
On-site pastoral and safety responsibilities at the college accommodation complex housing over 60 undergraduate and graduate students.
- 1998-2000      **YEDI'OT AHARONOT, Tel-Aviv – News Editor**  
Full-time copy editor at the news-desk of Israel's largest newspaper. Diplomatic, economic and international affairs. Deputy Editor of several special magazines including the millennium editions.
- 1994-1998      **GALEI ZAHAL, Jaffa / Jerusalem – Reporter and News Editor**  
Conscript radio-journalist. Reporter in the West Bank (1996-7). Edited and read news on-the-hour and the midnight edition. Sub-edited and edited the daily news hours "Good Morning Israel" and "Good Evening Israel".

## AWARDS AND FELLOWSHIPS

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- 2009            UNESCO funding for post-doctoral project on Biosphere Reserves
- 2006            Porter Fellow (post-doctoral), Tel-Aviv University  
British International Studies Association visiting scholarship
- 2000            University Rector's prize, Tel-Aviv University  
Social Sciences Dean's prize, Tel-Aviv University
- 1999            Social Sciences Dean's prize, Tel-Aviv University

## OTHER

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- Languages      Hebrew, English – native speaker  
Arabic, Spanish – intermediate level
- Certificates    Permaculture Design Certificate, Israeli Driving Licence
- Other Skills    Extensive experience in co-operative work in groups, planning and organising workshops, meetings and trainings.  
Expert facilitator of consensus decision-making.  
Capable user of Microsoft Office, SPSS, Coyote and WordPress

*Curriculum Vitae*  
Tareq Abu Hamed  
Director of Center for Renewable Energy and Energy  
Conservation (CREEC)

**Personal and Contact Information**

Date of Birth : 01-Oct-1972  
Address : Kibbutz Ketura  
D.N. Eilat 88840-Israel  
e-mail : tareq.abuhamed@arava.org  
Tel : 0523426261  
Fax : 08-6356634

**1. Professional Preparation**

Gazi University (Turkey)	Chemical Engineering	B.S., 1996
Gazi University (Turkey)	Chemical Engineering	M.S., 1998
Ankara University (Turkey)	Chemical Engineering	Ph.D., 2002
Weizmann Institute of Science (Israel)	Environmental Sci. Energy Res.	Post.Dr 2003-2006
University of Minnesota (USA)	Mechanical Engineering-Solar Energy Lab.	Post.Dr 2006-2008

**2. Teaching and Advising**

Advising two Ph.D. students and one master's level student at the University of Minnesota (2006-2008)

Advisor for graduation projects in Ankara University (2000-2002).

Chemistry teacher at the International School of Language - Ankara (1996-2002).

Lecturer and researcher at the Arava Institute for Environmental Studies. 2008-Present

**3. Reviewing**

International Journal of Thermal Sciences  
International Journal of Hydrogen Energy  
Journal of Energy and Fuels

**3. Languages**

Arabic (my native language)  
English (very well)  
Turkish (very well)  
Hebrew (very well)

**4. Main Research Interest Area**

Solar hydrogen production and storage, Photovoltaic technologies, Metal nanoparticle production Biotechnology, Biomass, Bioremediation, Biotransformation.



## 5. Professional Memberships

Israeli Chemistry society  
American Solar Energy Society

## 6. Projects

In-situ production and hydrolysis of metal nanoparticles  
On board hydrogen production and storage  
Bioremediation of Petroleum Hydrocarbons (BTEX)  
Biomass gasification.  
PV Evaluation and testing.

## 7. Publications

### *Journal Publications*

1. **Tareq Abu Hamed**, Luke Venstrom, Aiman Alshare, Marc Brühlhart, and Jane H. Davidson. 2009. Study of a Quench Device for the Synthesis and Hydrolysis of Zn Nanoparticles: Modeling and Experiments. *J. Sol. Energy Eng.* 131 (3) pp.
2. **Abu Hamed T.**, Davidson J.H., Stolzenburg M., 2008. Hydrolysis of Evaporated Zn In A Hot Wall Flow Reactor, *Journal of solar energy Engineering*, 130(4) pp..
3. Irina Vishnevetsky, Michael Epstein, **Tareq Abu-Hamed**, Jacob Karni. 2008. Boron Hydrolysis at Moderate Temperatures – First Step to Solar Fuel Cycle for Transportation, *Journal of solar energy Engineering*, 130(1), pp. 14506-14511.
4. **Abu Hamed T.**, Karni J., Epstein M., 2007. The Use of Boron for Thermochemical Storage and Distribution of Solar Energy. *Solar Energy*, 81(1), pp. 93-101.
5. **Abu Hamed T.**, Bayraktar E., Mehmetoglu U., and Mehmetoglu T., 2004, The biodegradation of benzene, toluene and phenol in a two-phase system, *Biochemical Engineering Journal* 19(2), pp. 137-146.
6. **Abu Hamed T.**, Bayraktar E., Mehmetoglu U., and Mehmetoglu T., 2004, Kinetics model for growth of *Pseudomonas putida* F1 during benzene, toluene and phenol biodegradation. *Process Biochemistry*, 39(8), pp. 983-988
7. Babaarslan Ç., **Abu Hamed T.**, Bayraktar E., Mehmetoğlu Ü., and Mehmetoğlu T., 2003, Biodegradation of BTEX compounds by a mixed culture obtained from petroleum formation water. *Energy Sources*. 25(7), pp. 733-742.
8. **Abu Hamed, Tarik**; Bayraktar, Emine; Mehmetoglu, Tanju; Mehmetoglu, Ulku. Substrate interactions during the biodegradation of benzene, toluene and phenol mixtures. *Process Biochemistry* (2003), 39(1), 27-35.
9. Babaarslan Ç., Tekeli A., **Abu Hamed T.**, Bayraktar E., Mehmetoğlu T., Ataoğlu F., Mehmetoğlu Ü. 2001. The growth of petroleum formation water microorganisms in BTEX medium. *Journal of Biotechnology*. Vol.: 2, 15-22.

### *Congresses*

1. Aiman Alshare, **Tareq Abu Hamed**, Marc Brühlhart, Luke Venstrom, and Jane H. Davidson. 2008. Design of a Quench Device for Synthesis and Hydrolysis of Zn Nanoparticles: Flow Modeling and Experiments. ASME 2008 2nd International Conference on Energy Sustainability, Volume 2 ASME Conf. Proc. ES2008 (2008)
2. **Tareq Abu Hamed**, Jane H. Davidson, and Mark Stolzenburg. 2007. Hydrogen Production via Hydrolysis of Zn in a Hot Wall Flow Reactor. ASME 2007 Energy Sustainability Conference ASME Conf. Proc. ES2007 (2007)
3. **Tareq Abu Hamed**, Jane H. Davidson and Julia F. Haltiwanger, Hydrogen Production via Hydrolysis of Zinc Nanoparticles Proceeding of the AIChE Annual meeting Salt Lake City, Utah November 4 -9, 2007.
4. **Abu Hamed T.**, Davidson J.H., Stolzenburg M., 2007. Hydrogen production via hydrolysis of Zn in a hot wall flow reactor, Proceedings of the ASME Energy Sustainability Conference, Paper No. 36176, Long Beach, CA, June 27-30.
35. Vishnevetsky I., Epstein M., **Abu Hamed T.**, and Karni J. Boron hydrolysis at moderate temperatures—first step to solar fuel cycle for transportation. 13th International Symposium on Concentrating Solar Power and Chemical Energy Technologies. June 20-23, 2006 Seville, Spain.
6. **Abu Hamed, Tareq**, Karni, Jacob; Epstein, Michael; The use of boron for thermochemical storage and distribution of solar energy. ISES Solar World Energy Congress Proceedings. Orlando, Florida USA. 6-12, August -2005.
7. **T. Abu Hamed**, E. Bayraktar, Ü. Mehmetoğlu and T. Mehmetoğlu, The Modelling of the Biodegradation of Benzene, Toluene and Phenol in A Multiphase System. "Second Int. Congress on Biocatalysis (Biocat 2004)", 1 (2004), p.258.
8. **T. Abu Hamed**, Ü. Mehmetoğlu, E. Bayraktar, Tanju Mehmetoğlu, Biotransformation of Chlorinated Hydrocarbons in Waste Water Using Pseudomonas Putida F1. "12th Int. Symposium on Environmental Pollution and its Impact on Life in the Mediterranean Region", (2003), p.83.
9. **T. Abu Hamed**, Ü. Mehmetoglu, E. Bayraktar, and T. Mehmetoglu. 2003. biotransformation of chlorinated hydrocarbons in waste-water using pseudomonas putida F1. 12th International symposium on environmental pollution and its impact on life in the mediterranean region. Appropriate solutions for environmental problems in emerging economies. 4-8 October 2003 Antalya-Turkey
10. **Abu Hamed, T.**, Bayraktar E., Mehmetoğlu Ü., and Mehmetoğlu T., 2002, The enhancement of benzene, toluene and phenol biodegradation by Pseudomonas putida F1. ISWA World Environment Congress and Exhibition, Vol. 3. pp. 1555-1562. Istanbul, Turkey.
11. Babaarslan Ç., **Abu Hamed T.**, Bayraktar E., Mehmetoğlu Ü., and Mehmetoğlu T. 2001. Biodegradation of BTEX compounds by a mixed culture obtained from petroleum formation water. Eastern Mediterranean Chemical Engineering Conference (EMCC), Ankara. Bio. 7.4. 62-63
12. **Abu Hamed T.**, Babaarslan Ç., Bayraktar E, Mehmetoğlu Ü., Mehmetoğlu T. 2000. Biodegradation of BTEX by Microorganisms isolated from formation Water. 11<sup>th</sup> International Biotechnology Symposium and Exhibition. Berlin, Germany, Vol 3, 415-417.

13. **Abu Hamed T.**, Bayraktar E., Mehmetođlu Ü., Mehmetođlu T. Substrate interactions during the biodegradation of benzene, toluene and phenol mixtures. National Chemical Engineering congress. Ankara, September, 2002. s.ÇAD 01.
14. Tuna S., **Abu Hamed, T.** Bayraktar E., Mehmetođlu Ü. The determination of the partition coefficient of benzene, toluene and phenol between aqueous phase and 2-undecanone. National Chemical Engineering congress. Ankara, September, 2002.
15. Cetecioglu F., **Abu Hamed, T.** Bayraktar E., Mehmetođlu Ü. Biotransformation of TCE in a single phase system. National Chemical Engineering congress. Ankara, September, 2002.
16. Meric K.E., **Abu Hamed, T.** Bayraktar E., Mehmetođlu Ü. Biotransformation of TCE in a two-phase system. National Chemical Engineering congress. Ankara, September, 2002.
17. Babaarslan Ç., **Abu Hamed T.**, Tekeli A., Bayraktar E., Mehmetođlu Ü., Mehmetođlu T. 2001. The biodegradation of BTEX's by mixed culture and the substrate interactions, Ayvalık/Balıkesir Turkey "12. Biotechnology Congress", 1, (2001), p.273.
18. Babaarslan, Ç., **Abu Hamed, T.**, Bayraktar, E., Mehmetođlu, U. and Mehmetođlu, T., The Biodegradation of BTEX by Microorganisms Isolated From Formation Water.. "4.National Chemical Engineering Congress", (2000), s.CA04.

## **Appendix 3**

### **Institute for the Environment support letter**



UNC  
INSTITUTE FOR  
THE ENVIRONMENT

THE UNIVERSITY  
of NORTH CAROLINA  
at CHAPEL HILL

137 E. FRANKLIN STREET  
CAMPUS BOX 5116  
CHAPEL HILL, NC 27599-6116

T 919.843.8556  
F 919.843.3113  
www.ie.unc.edu

September 14, 2010

The Study Abroad Office  
CB 3130, FedEx Global Education Center  
The University Of North Carolina  
Chapel Hill, NC 27599-3130

Dear Rodney Vargas,

We are writing on behalf of the Institute for the Environment to encourage you to recognize the environmental program that is offered through the Arava Institute. This is a program that would attract and benefit students from the following majors: Environmental Studies and Science, Geography, Biology, and International Studies Majors who are looking for a program that is relevant to their major in Israel. This may also interest students in Peace, War and Defense and students who are aspiring to become Middle Eastern experts from a variety of disciplines.

I (Greg Gangi) have reviewed this program in the following manner. I have examined their web site, and examined their course offering and testimonials from former students. I have met with David Lerner and Alon Tal, representatives from the Arava Institute on two different occasions. I have also met with two former students from Israel and Jordan during one of Dr. Lerner's visits to UNC. Furthermore, Ms. Dori Chandler (Class of 2009), environmental studies major, spent the academic year 2007-2008 at the Arava Institute. I debriefed her individually on several occasions about her academic experience at the Arava institute. Additionally, Rodney Vargas and I also met with Ms. Chandler and interviewed her not only about the academic side of the program but also about the nature of the accommodations and security at the Arava Institute. During the past two summers (09 and 10), Elinor Benami (Enss minor and class of 2010) and Justin Loiseau (Enst major) have completed research internships with the Arava Institute. I debriefed both of these students about their experiences.

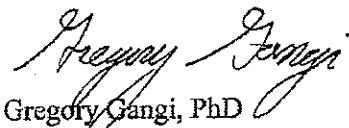
Based on what I (Greg Gangi) have learned from Ms. Chandler and other former students of the Arava Institute, the academic content of the program is quite rigorous. They offer a nice mix of courses that are a mixture of ecology, agricultural science and public policy. The program has the idealistic goal of fostering cooperation in the region by promoting cooperation on ecological, agricultural and water management issues. To help further these aims they maintain a student balance that is roughly 1/3 Israeli, 1/3 Arabs from outside of Israel and 1/3 from other parts of the world (mostly Europe and the United States). Hence, as Ms. Chandler noted the experience of living with these students from diverse backgrounds and having to face controversial issues collectively is an intense educational experience on its own.

The courses taught include natural and social science classes and a number of courses are interdisciplinary. The program is thus suitable for natural and social science majors. Perhaps the Arava's Institute most interesting niche is that of exploring the role between resources management and conflict and in particular how cooperative resource management practices can be developed that will help produce peace in the region. They strive to play an important role in the training of resource manager (especially water resource management) of neighboring Arab countries. Hence this is a great way for someone wishing to research water resource management in this region to develop an impressive contact list.

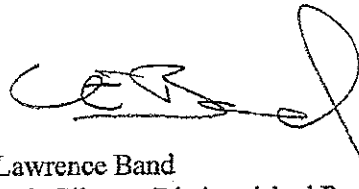
During the past two years, we have had a few students come and ask advisors for the three environmental majors questions about the Arava Institute so we know that there is a demand on campus for this program. Many of the students who have expressed an interest in this program are interested in doing a study abroad in Israel but would like to do something with an environmental and/or peace and justice focus.

If we can be of any assistance in providing further information, please feel free to contact me.

Sincerely,



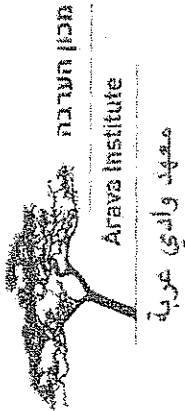
Gregory Gangi, PhD  
Associate Director for Education



Lawrence Band  
Voit Gilmore Distinguished Professor  
Director, Institute for the Environment  
UNC Institute for the Environment

## Appendix 4

### Sample Orientation materials



## Student Guide to the Arava Institute for Environmental Studies

Spring 2011

Welcome to the Arava Institute for Environment Studies student information guide.

In this guide you will find important information helpful to your preparation and participation in our program. You will find many aspects of your experience on our program very different to what you are used to in US universities and we hope you enjoy and embrace the new experience.

In addition to reading the Student Guide, please complete and return the Student Information Questionnaire. This should be returned via email to [info@arava.org](mailto:info@arava.org).

### WHAT YOU CAN FIND IN THIS GUIDE

- Who's who at the Arava Institute?
- Academic Calendar
- Academics
  - Program requirements
  - Course list
  - PELS
- Student Life
- Applying for a Student Visa from abroad
- What to Bring

Page 1

- General Information
  - Electrical appliances
  - Computer
  - No animal policy
  - Health Insurance
  - Israeli Medical Insurance
  - Money
  - Keeping in touch
  - International Student Identity card
- Kibbutz Ketura
- Security
- Community Service
- Checklist

### WHO'S WHO AT THE ARAVA INSTITUTE

- David Lehrer : Executive Director
- Miriam Sharton: Associate Director
- Uri Nishinow: Financial Director
- Eli Groger: Academic Director
- Cathie Grant: Program Director
- Barbara Finkel: Campus Life Director
- Dane Cooper: Academic Program coordinator
- Brenda Hausley: Admissions coordinator
- Michelle Shachar: Peace building and environmental leadership seminar (PELS)
- Cecil Rimer: Middle Eastern recruitment
- Sharon Benheim: Director of Alumni Projects and APEN
- Clive Lipchin: Director of Research
- Abby Laitman: Research programs coordinator and grant writer
- Tareq Abu Hamed: Director of Center for Renewable Energy and Energy Conservation (CREEC)
- Elaine Soloway: Director of the Center for Sustainable Agriculture
- Serdar Afarany: Field manager for Center for Sustainable Agriculture

Page 2



expected to participate. Information on the trip schedule will be made available before each trip.

## **BILLING AND PAYMENT**

### Supplementary fees

While you are on the Arava Institute program, you will be fully provided with room and board on Kibbutz Ketura. However, a \$120.00 security deposit is required of all students. This deposit needs to be paid at orientation during your first week at the Arava Institute. **Please bring check (payable to The Arava Institute) with you.** If you don't have a personal checking account you can bring cash. The check will be held as security (it won't be cashed) and will be returned to you provided that the following conditions are met:

- Your room is left in good condition and is not damaged
- All borrowed library books are returned in good condition
- All check out obligations are fulfilled as required
- All community service obligations are completed
- All debts to AIES are paid in full
- All telephone bills are paid in full
- Payment for damage to your room may be taken from the security deposit

## **ACADEMIC PROGRAM**

### Program requirements

- Each student is expected to register for 4 or 5 courses (about 12 - 15 credits), including at least one compulsory interdisciplinary course. All students are required to participate in the Peace-building and Environmental Leadership Seminar (PELS), a non-credit course. All necessary reading material will be provided.
- Course registration will take place during orientation. Students choose courses with the help of academic advisors. If you or your university needs to see syllabi or other academic information in advance, please let us know and we will send you the information that you need.

Judy Bar-Lev: Office Manager  
Ronit Friedman: Reception  
Yonatan Chesler: Computer services manager  
Adi Bellman: Accounting  
Ruti Kaplan: Resource Development

Rabbi Michael Cohen: Director of Special Programs, USA  
Hanan Ginat : Director of Dead Sea and Arava Science Center under the auspices of Ben Gurion University of the Negev

Gail Osman: Resource Development  
Gigi Strum: Scientific editor  
Sarit Maagan-Rosenfeld: Logistics coordinator of Eco-Path/E'shivyl Haaviva and Hebrew grant writer

Tali Adini: Director of Eco-Paths  
Elad Topel: Executive director of Arava Environmental Consulting and Technology

Shira Kromlich: Environmental engineer for Arava Environmental Consulting and Technology

## **ACADEMIC CALENDAR SPRING 2011**

February 22 Students arrive  
February 22-26 Orientation Begins  
February 27 First Day of class  
April 17-26 Passover vacation  
April 27 First day of class after Passover vacation  
May 9 Israel Independence day (Monday) No class  
June 8 Shavuot - No class  
June 10 Last day of class  
June 12-22 Exams  
June 24 Last day of semester

- Attendance at orientation is **mandatory**.
- The AIES curriculum features several overnight trips in the course of each semester. These trips are part of the academic program and all students are

- On completing the semester students will receive official transcripts from the Overseas Students Program of Ben Gurion University. You will be asked to provide us the address of the school where you would like your transcripts to be sent on completion of the semester. A copy of the transcript will be sent to your home as well. For more information and/or to acquire additional transcripts, please refer to the transcript section on our website.

**Course List for Spring Semester 2011 (subject to change)**

**Science Courses**

- Ecology of the Arava<sup>1</sup> Dr Elii Groner
- Environmental Biology<sup>1,2</sup> Dr Gabi Banet
- Introduction to Earth Science<sup>1,2</sup> Dr Hanan Ginat
- Bio Energy<sup>1</sup> Dr Ilan Stavi
- Introduction to Environmental Science<sup>1,2</sup> Dr Shmuel Brenner

**Policy and Social Science Courses**

- Introduction to Environmental Economics<sup>1,2</sup> Prof. Nir Becker, David Lehrer
- Environmental Politics<sup>1,2</sup> Dr Uri Gordon
- Environmental Philosophy<sup>1</sup> Dr Uri Gordon
- The Basics of Organic Food production<sup>1</sup> Dr Elaine Soloway

**Interdisciplinary Courses**

- Introduction to Energy Policy and Management<sup>1,2</sup> Dr. Tareq Abuhammed
- Directed Research and Independent Study in the Environment<sup>1</sup> Dr Clive Lipchin
- Water Management in the Middle East<sup>1,2</sup> Dr Clive Lipchin
- Introduction to Statistics for the Social Sciences<sup>2</sup> Dr Elii Groner

Key for Academic Credit X<sup>1</sup> Undergraduate credit X<sup>2</sup> Graduate credit

**Peace-building and Environmental Leadership Seminar (PELS)**

The Peace-building and Environmental Leadership Seminar (PELS) is a compulsory component that consists of a series of discussions, workshops, guest lectures, and field trips. Students are exposed to people, places, and materials connected to the current issues of conflict with the hopes of illuminating peace-building measures. PELS has been especially created to address contemporary

issues concerning nationality, race, religion, and ethnicity in a facilitated atmosphere with the aim of encouraging open dialogue among the Arava Institute's diverse student body. PELS provides a safe forum to develop tools and skills that improve inter/intra-cultural communication. The program offers an ongoing process to build a supportive learning community that emphasizes reflection, self-knowledge, and cultural awareness. Participants learn that tensions can bring forth new strengths and solidarity. The program strives to improve leadership capabilities, and encourage more effective and creative contact between students. Participants are encouraged to implement new principles of understanding and coexistence into their daily lives as students in the Arava Institute program and outside the program among their peers, family and colleagues.

**CAMPUS LIFE**

The Campus Life team is here to support you in your basic needs during your studies at The Arava Institute. Our team consists of a Campus Life Director and 1-3 Program Associates. Here is a brief explanation:

- Your Campus Life Director (CLD) is responsible for the day to day life needs of the students on campus; support for medical needs, day-to-day logistics, and extra-curricular programming.
- Your Program Associates (PAs) are usually recent AIES alumni, and they are your "hands-on" staff who live close to you and help you with many day-to-day issues. Each PA has set responsibilities, so try to direct your questions to the appropriate PA. **LOVE YOUR PAs—they love you!**

The Arava Institute begins with a three-day orientation to student, academic and kibbutz life at the Arava Institute. The orientation is mandatory for all students. The Arava Institute is located on Kibbutz Keturah and the dormitories are situated on the grounds of Hadassah's educational complex on the kibbutz. When you arrive, you are taken to your accommodation, and immediately start getting to know the people who you will spend your life with for the next few months. The student population is generally broken down into a third from North America, Europe,

and other countries *outside* of the Middle East; a third from Israel (Jews and Arabs); and a third from Jordan, the Palestinian Authority and other Middle Eastern countries.

The Arava Institute's main dormitories consist of four units facing a grassy common area. Each unit is comprised of four rooms, which are grouped around a common area that includes a lounge and kitchenette. There are usually two students to a room and they share an ensuite bathroom.

Differences in nationality, religion, age, language, and social norms emerge daily to create dynamics where communication can be challenging. Roommates have to decide their household policies regarding kosher/non-kosher food, Sabbath observance, Muslim alcohol prohibitions, vegan needs, composting, water use, cleaning responsibilities and how to celebrate different religious and national holidays.

The common areas in the units and in the dorms facilitate the program's social life as students spend a lot of their free time together. The Arava Institute's Campus Life Office organizes fun activities and trips, such as night hikes, for a break from the academic pace. Students are also actively encouraged to create their own social activities and events.

Students can attend social activities that are held on the kibbutz and there is a library for research and reading material. Students take the opportunity of living in the desert to go hiking, hiking, and camping nearby.

There is also a swimming pool generally open from April to November, tennis courts, a soccer field, and horseback riding.

Although each unit has a kitchenette, students are not expected to cook their own meals. Three meals a day are served cafeteria style in the kibbutz dining hall where students eat with the kibbutz members, staff, guests, and others who are

staying on the kibbutz. Your clothes will be washed in the kibbutz's communal laundry facility.

Some items, such as food, toiletries and basic school supplies, can be purchased at a small shop on the kibbutz.

Arava Institute students are encouraged to sign up for an adopted family with whom they can visit, which helps involve them in kibbutz life. Students also work one night a semester in the dining hall, so they contribute in part to the kibbutz community.

A kibbutz is not like your basic village or town. Kibbutz Ketura has about 150 adult members who live there year-round and about 50 people who come to study and/or volunteer. There are approximately 150 children ranging from newborns to university students. The kibbutz has a communal laundry, a library, a communal dining hall, and a small store for essentials and treats. There is no cash machine on kibbutz. There is no post office either, but one can buy stamps in the kibbutz store and mail letters from the kibbutz via mobile post service. Otherwise, all other shopping and errands can be done in Eilat, which is only 40 minutes away by bus. Students are encouraged to bring their own laptop and have it connected to the Internet in their dorm room. Everything on kibbutz is a five-minute walk. The highway is right outside the main gate with buses going to Eilat in one direction, and to the Dead Sea (two hours away), Beersheva (three hours away), Tel Aviv and Jerusalem (each four hours away) in the other direction.

The winters in the southern Arava Desert (generally November through March), where the Arava Institute is located, are mild and pleasant. Typical winter days feature sunny skies and an afternoon temperature of about 20 degrees Celsius (about 70 degrees Fahrenheit). Clear winter nights in the desert can be quite cold, with temperatures dropping below 10 degrees (down to the 40s or occasionally even to the 30s Fahrenheit). An actual freeze is virtually unheard of. The scarce rains (about one inch per year) fall in the winter, occasionally causing flash floods. There has never been snow. The summers are generally hot and

oppressive. Afternoon temperatures over 37 C (98.6 F.) are common, and often go as high as the mid 40s (over 110 F).

### APPLYING FOR VISA

All students accepted to the Arava Institute for Environmental Studies are expected to arrange for an Israeli student visa in their home country. It is advised to do this two months prior to coming to Israel.

Students are requested to make contact with the nearest Israeli Consulate office to arrange for a Student A-Z Multiple-Entry visa for one year. It is advised to check with the consulate (or the consulate's website) for all required documents that you will have to present.

The Arava Institute will provide you with an official acceptance letter which you will need to submit to the consulate.

MASA students should bring, in addition, any MASA documents that have been received.

It is recommended that you make yourselves an extra copy of all documents submitted to the consulate.

\*\* Students who are Israeli citizens living abroad need to arrange for their own Israeli army release documents according to the number of days of each semester.

### WHAT TO BRING

Clothes	Other Important items
pants	school supplies- paper, pens, notebooks, etc.
shorts	two sets of twin size sheets (sheets are not provided)

E-shirts	towels
warm long-sleeved shirts	sleeping bag
winter coat and hat	camera
underwear, socks	day pack
sweaters, sweatshirts	travel alarm clock
bathing suit	flashlight
pajamas	sunscreen
nicer clothes for Shabbat (Sabbath), special events or holidays	two canteens or insulated bottle
hiking boots	containers
sneakers/trainers	camping mattress/and other camping gear
sandals	hand-laundry soap
sun hat	snorkel and mask ( optional)

- Personal computer (highly recommended) .You will need to operate it on 220 V 50Hz electricity. (See section on Computers)
- Prescription medicines. You must bring the entire quantity you will need during your stay in Israel. **DO NOT ASSUME THAT YOUR PRESCRIPTION CAN BE FILLED IN ISRAEL.**
- If you are a life-guard, please bring your certification.
- If you have a driver's license, please bring the original with you.

Optional: bicycle, DVDs, cellular phone, and musical instruments.

### GENERAL INFORMATION

#### ELECTRICAL APPLIANCES

Electrical current in Israel is 220 volts (as opposed to 110 volts in North America) and 50 cycles (as opposed to 60). If you bring any appliances with you such as a hair dryer or tape player, bring a transformer (not just an adapter). Some appliances are "voltage switchable."

## **COMPUTER**

**General:** Make sure your computer can operate with 220 volts / 50Hz. You may need a transformer or voltage converter; check with a qualified service person. You may need to purchase and or download specific software for certain classes or projects.

### Macintosh:

The vast majority of computers in Israel are "IBM" format, including all of those at the Institute. You may have problems finding qualified "Mac" service technicians if you need them.

### **The Institute Provides:**

- "Help Desk" support for internet-connectivity, and basic trouble-shooting, access to internet via cable, or wireless, and possibly both. You may need to make changes to your computer's internet connection settings to access the internet.
- Access to Ben Gurion University's on-line journals.
- Black and white printing and copying from a specific printer. You will receive a copy-card and instructions on how to use it upon your arrival.
- There are a limited number of computers to distribute to students who do not arrive with a computer. Many of these computers are older, do not allow certain features, and may need to be shared; it is highly advantageous to bring a laptop if you have one. If you are not intending to come with a computer please tell us as soon as possible.

**The Institute does NOT provide** support for personal hardware issues including but not limited to supply or advice on speakers, external storage media (disks on key), batteries, etc. We can give you names of local vendors who repair

computers and supply parts and accessories. The Institute is not responsible for service at outside vendors.

**The institute is not responsible** for personal computer problems including but not limited to lack of memory, outdated programs, purchase and connection of accessories, etc.

### **NO ANIMALS**

Students are **not allowed** to keep dogs, cats and/or other pets in the dormitories or on Kibbutz Keturah.

### **HEALTH INSURANCE**

Please ensure before arriving in Israel that you have arranged appropriate travel and health insurance to cover you for the program period. **All overseas students must come with travel insurance. Please enclose a scanned copy of your travel insurance with your student questionnaire.**

### **Israel medical coverage**

- In addition to the recommended U.S. health insurance coverage, included in the fees for the Arava Institute program is an Israeli KUPAT HOLIM health insurance policy for non-Israelis.
- This Kupat Holim policy covers the most common cases of our students' needs; illness, accidents and hospitalization if needed. The policy does not cover: preexisting conditions, dental care, terminal illnesses, or issues relating to pregnancy; or medication of any kind.
- The Kupat Holim policy is a basic medical insurance plan that covers treatment in the infirmary at the local regional clinic at Yotvata (a 10-minute drive away) and elsewhere within the State of Israel. It also covers hospitalization in Kupat Holim hospitals only.
- Students planning to travel outside of Israel must come with their own travel insurance, as the Kupat Cholim insurance only covers

care within Israel. The Institute may have organized study trips to Jordan and travel insurance is required.

- The Arava Institute strongly recommends that non-Israeli students carry comprehensive medical insurance from their home country. In the event that a medical need arises that is excluded by the KUPAT HOLIM policy, such as a pre-existing condition or prescriptions, students will be required to make direct payment - in this case insurance from the student's home country may enable the student to recover those funds.

#### MONEY

**You need to arrive to orientation with personal check or cash to the value of \$120.00.** There is no ATM on the kibbutz in the immediate area. The nearest ATM machine is at Yotvata , a 10-minute drive. Therefore, you should be prepared to arrive to orientation with checks or cash to the amount of 120 US\$ in order to pay your program deposits, which will be required during orientation. In addition, you should bring some money for extra spending, including souvenirs, trips to town, weekend traveling, and your day to day shopping at the kibbutz store. You will also be expected to pay for the phone calls you make within Israel and overseas.

#### • Traveler's Checks

There are several options for bringing money to Israel. One is traveler's checks. The advantages of these are that they can be replaced should you lose them, and you can cash them almost anywhere. The disadvantages are that they can't be cashed on the kibbutz, and they are expensive to cash at the bank. If you choose to bring traveler's checks, bring large denominations (at least \$50 checks) because you will be charged per check when you cash them.

#### • Bank Cards

**We recommend this as probably the cheapest and most efficient way to arrange finances.** You can access money from your U.S.(or other overseas) bank account from automatic teller machines (ATMs) in Israel, provided that they are on the same network. The most common international network on

ATMs in Israel is Cirrus. Please note: if your personal identification number is more than 4 digits, it will not work in Israeli ATMs. There is no ATM on the kibbutz.

#### • Credit Cards

Major credit cards such as American Express, Mastercard, and Visa are widely accepted in Israel. Mastercard and Visa cards can be used to withdraw money from Israeli banks. American Express cards can be used to obtain money from the American Express office in Tel Aviv. The Kibbutz cannot accept credit cards for your phone, shop or other expenses.

In an emergency, you can have money wired to you in Israel. If you need to wire money, contact Uri Musinow ([uri.musinow@arava.org](mailto:uri.musinow@arava.org)) and he will give you the instructions.

#### • Banks

Israel Discount Bank, Bank Leumi, Bank HaPoalim, and Bank Mizrahi, the major Israeli banks, have offices in Eilat. Two have branches in the U.S.:

Israel Discount Bank	511 Fifth Avenue, New York, NY 10017	(212)551-8500
Bank Leumi	579 Fifth Avenue, New York, NY 10017	(212)343-5343

Upon your arrival at AIES, we will be happy to direct you to one of the nearby bank branches in Eilat.

#### KEEPING IN TOUCH

**Receiving mail** You can receive mail at the following address:

Your name

Arava Institute of Environmental Studies

Kibbutz Ketura

D.N. Hevel Eilat 88840

## ISRAEL

### Instructions for sending mail to AIES students:

- "Air Mail" should be clearly marked on the envelope.
- If someone wants to send a package to you in Israel, please be aware that you might be taxed upon receipt of the package. Israeli customs officials may open packages, and if it appears to them that you might sell what is in the box then you will be taxed.
- The best and most reliable way for sending and receiving packages from North America to the Arava Institute and vice versa is through the regular Postal Service via Express Mail Service (EMS). The other services such as DHL, UPS, and FedEx etc. do not deliver to Kibbutz Ketura; therefore we do not recommend using these services.

### Telephone Service

You will be assigned a phone number when you check in to your room. A deposit for phone usage is included in your security deposit. You will be billed for all calls made each month. The phones can be used for calls within the kibbutz, in Israel and for calls overseas. If you choose, outside calls can be disabled, with inter-kibbutz calls free.

### INTERNATIONAL STUDENT IDENTITY CARD

The International Student Card is an internationally recognized identification and discount card. This card can be useful during your stay in Israel and while traveling as it entitles you to discounts on bus fares, museum entrance fees and other purchases. For more information please see <http://www.isccard.com>

### KIBBUTZ KETURA

The Arava Institute is located on Kibbutz Ketura, located 50 km north of Eilat in the Arava Rift Valley. We invite you to take a virtual bus tour and learn more

about Kibbutz Ketura by visiting Kibbutz Ketura's web site at <http://www.ketura.org.il>

For a map of the Arava region please see <http://www.eilat-guide.com/images/maps/arava.gif>

### STUDENT SAFETY AND SECURITY

The Arava Institute views the safety of its students as a paramount value and would not continue to run its program if doing so involved placing students at risk. The Institute administration re-evaluates the security situation periodically and is committed to taking any additional steps if there is an indication that such measures are necessary. At this time, the Institute feels confident that the operation of its academic program does not place AIES students in any danger. At the same time, the present enmity makes the Institute's mission of cooperation more important than ever.

To ensure student safety, during times of heightened political tension, the student life program distributes a travel advisory for Arava Institute students, specifying areas that should be avoided and when necessary suggesting strongly that they limit their travel. Guidelines for non-Israeli students about normal security practices in Israel such as checking bags at entrances to malls or stores, the concept of "suspicious objects", etc... are presented to students. Students traveling in Israel are requested to maintain contact with the Arava Institute student life department periodically and provide it with their cellular phone numbers so that they can be reached when they are away. An armed guard accompanies all official AIES overnight trips in the country.

The Institute considers the Kibbutz Ketura community, in which the Institute campus is located, to be an extremely safe place. The kibbutz would only become unsafe for non-Israeli students to stay on the kibbutz in the unlikely event that there was threatening military activity along the Jordanian or Egyptian borders in the immediate area, or if the Southern Arava region's Israeli civil authorities were to declare a state of high alert or war. There are few scenarios at present where this seems imaginable. If such a situation arose, however, the Institute would help students make arrangements to immediately reserve flights from the

Eilat airport to Ben Gurion airport where they would continue on to their home country. In such a case, the Institute would also notify the home country's embassy for students so they would know the whereabouts of their citizens.

Please note that Kibbutz Ketura is not in a contested area, and that its isolation adds a significant margin of safety to the Institute's other measures.

If a student has to leave the program early, the Institute would evaluate the requirements of each course separately for completion. Some courses have no exams, but rather a final paper, in which case the paper could be turned in early or submitted by mail. Some courses have take-home exams that can be administered from a distance. If a course has a conventional exam, the Institute would arrange with its lecturer to either have it administered at the students' home university or to allow the student to take the exam early.

In any case, the Institute will make whatever arrangements are necessary so that students can complete the program.

In case of emergency you can always reach our director:

David Lehrer at cellular phone number 052-3691-533

From overseas dial +972-52-3691533

### COMMUNITY SERVICE

Every student is required to complete 10 hours of community service that will be assigned upon arrival at the Institute. This will be organized between the student, the program director and the campus life director.

### CHECKLIST

- Have you completed the electronic student questionnaire, confidential medical form and insurance form and emailed it to [info@arava.org](mailto:info@arava.org)? **The medical form and insurance form need to be signed, scanned and e-mailed or sent in the snail mail.**
- Have you photocopied and sent the front page of your passport before the start of semester?
- Have you paid your program fees?
- Have you sent a scanned copy of your travel insurance?
- Have you contacted your local Israel Consulate or Embassy regarding applying for your student visa before arrival?
- Have you sent your flight information; date and time of arrival; Airline and flight number to the Arava Institute?
- Do you intend to be in Israel before the start of the program? If so, did you provide us with contact information (for example your mobile phone number) so we can reach you before the beginning of the semester?