

# Research

## Research Grants Approved by the Israel Science Foundation in 2004-2005

Two studies conducted by Open University faculty were supported by funding from the Israel Science Foundation this year.

- **Dr. Anat Barnea**, Dept. of Natural Sciences: Effect of Social Change on Neuronal Recruitment, Survival, and Replacement in the Adult Brain

Neurogenesis and neuronal recruitment in adult brains is a well-known phenomenon in warm-blooded vertebrates, including humans. In birds, most of the new neurons die. Those that survive numerically replace older ones. The hypothesis is that this phenomenon serves adaptive functions and contributes to the cellular basis of brain plasticity and ability to acquire new long-term memories. We found that when adult birds are exposed to a complex social setting, more neurons are recruited in parts of their brains that process visual and auditory information, than in brains of birds which are exposed to a simple setting. This indicates that social complexity affects neuronal recruitment in the brain. In addition, we found that the social setting affects neuronal survival. The proposed study will further expand our knowledge of aspects of neuronal mechanisms underlying behavior and will contribute to our understanding of the control and functions of the plasticity of the adult brain.

- **Dr. Lilach Shalev-Mevorach**, Dept. of Education and Psychology, with Anat Ben-Simon: A Multidimensional Model of Attention for Identifying Impaired Attentional Functions in Adults with ADHD

This study investigates the relationship between various components of the attentional system and ADHD as manifested in the adult population. Results of the research will then be used to develop and validate a battery of ADHD diagnostic measures grounded in a contemporary theoretical framework of the human attentional system. The diagnostic battery will assess the functions of selective attention, executive attention, sustained attention and orienting of attention, using a variety of tasks that uniquely assess these four functions. Various psychometric methods will be used to analyze the data and test the reconstructed attentional factors model against the single general attentional model and other alternative models. In addition, relation between specific deficits in attentional functions and various (DSM-IV) symptoms of ADHD will be explored.

A third study by an Open University faculty member was supported by a grant from the ISF through Tel Aviv University:

- **Dr. Galit Adam**, Department of Literature, Language and the Arts, with Outi Bat-El (Tel-Aviv University) and Elinor Saiegh-Haddad (Bar-Ilan University): Prosodic Effects on Morphological Development: A Study of the Acquisition of Arabic and Hebrew

The research explores the development of prosodic structures (i.e., word length, stress pattern, syllable structure, etc.) and their effects on the acquisition of inflectional morphology by children acquiring Hebrew and Arabic (Palestinian Arabic spoken in Israel). Hebrew and Arabic differ in their prosodic structure in terms of syllable structure and stress pattern. Nevertheless, in both languages, there is a similar effect of prosody on the morphological structure. Our study will reveal whether the prosodic distinctions between the two languages lead to different patterns of morphological acquisition, and if so, at which stage of the acquisition the differences arise. Beyond the research's theoretical objectives, it has some clinical implications. The description



of the prosodic development and its effect on morphological development will provide a basis for detecting abnormalities at a very early stage, since evidence for prosodic structure emerges significantly before the emergence of morphological structure and morpho-syntactic knowledge. The methodology of the research is both qualitative (using theoretical linguistic methods), and quantitative. Acoustic analysis of the early speech will be conducted as well.

## Research Grants from External Funds Approved for 2005-2006

Four Open University faculty members were awarded research grants by external funds for the 2005-2006 academic year:

- **Prof. Gershon Ben-Shakhar** (with Asher Cohen, Hebrew University of Jerusalem) was awarded an ISF grant for a study on: Attentional Selection in Focused and Divided Attention Tasks: A Combined Behavioral and Psychophysiological Approach.
- **Dr. Mustafa Kabha**, Dept. of History, Philosophy and Judaic Studies (with Nahum Karlinsky, Ben Gurion University), was awarded an ISF grant for a study on: The Palestinian Arab Citrus Industry, 1850-1948: Economic, Social and Cultural Aspects.
- **Prof. Eli Levin**, Dept. of Mathematics (co-investigators: Prof. Doron Lubinsky, Georgia Institute of Technology and Prof. Avram Sidi, The Technion – Israel Institute of Technology), was awarded a grant (via the Technion) by the U.S.-Israel Binational Science Foundation (BSF) for: Investigation of a Class of Vector-Valued Rational Interpolants and Orthogonal Polynomials.
- **Prof. Nurith Gertz**, Dept. of Literature, Language and the Arts, was awarded a grant by the Israeli-Palestinian Science Organization (IPSO) for a study on: Space and Memory in Israeli and Palestinian Cinema.

## Research Grants from the Open University Research Authority Fund

Sixty-eight requests for funding were submitted to the internal fund in 2004-2005. The Steering Committee approved 61 requests: 6 for the advancement of on-going research; 1 exploratory research grant; 12 research grants; 4 grants of excellence for doctoral students; 35 grants for continuing education research; and 3 grants to researchers who submitted proposals to external funds which were judged as “very good”, but were not given grants by the funds.

Below are short descriptions of three of the studies that received grants from the internal fund:

- **Dr. Nurit Goldman**, Dept. of Natural Sciences (exploratory research grant): Study of the Hydrothermal Minerals in the Chain, Discovery, Atlantis II and Thetis Deeps of the Red Sea

This study examines the mineral composition of sediments that have been accumulating for the last few thousand years in the sub-marine deeps of the Red Sea. A hot brine that originates in the active Atlantis II Deep flows into the neighboring Chain and Discovery deeps, that are located in the central Red Sea at a depth of more than 2000m. The in-flowing hot brines form stratified water columns, crystallize minerals, settle and accumulate on the deep floors. The study of these minerals may help in understanding the crystallization processes within the water column and reconstruct environmental conditions that prevailed over the last several thousand years.

- **Varda Wasserman**, Dept. of Management and Economics (grant of excellence for a doctoral student): The Power of the Beautiful – Organizational Aesthetics as a Control Tool  
Aesthetics is a primary and basic experience in human beings' perception of their environment and therefore research on aesthetics in its organizational context may have a significant contribution to this area. On one





level, accumulation of knowledge enables the organization to consciously reflect on the implications derived from its aesthetic image and through it to understand something of its actions. On another level, understanding organizational aesthetics will enable the organization to design its appearance in such a way as to generate in its employees and in its clients the emotions it desires and therefore actually govern and influence those emotions. This research analyzes the role of the organizational environment's aesthetics in constructing an organizational discourse, in the different usages of aesthetics as a control tool by various actors in the organization (mainly its leaders) and to examine the limits of this control.

■ **Dr. Mira Yungman**, Dept. of History, Philosophy and Judaic Studies (grant for the advancement of on-going research): The Impact of Changes in American Jewish Women's Lives on the Leading Jewish Women's Organizations 1980-2000

Voluntary organizations are the basis for the existence of the American Jewish Community. The thousands of Jewish organizations, small and large, are the tools through which American Jews express their Jewishness. Almost from the inception of American Jewry as a significant community, women played a crucial role in these organizations, as in the maintenance of Jewish life in America. This research investigates whether the two leading Jewish women's organizations in the US changed as a result of the significant changes in women's lives in the 1980s and 1990s. It also explores the following questions: Did these organizations change their basic aims and ideology? Did the social makeup of their membership change? How did they face the new situation? To what extent, if at all, did they absorb feminist thought and other changes that the feminist movement brought about in the thinking and identity of American Jewish women?

### **Research Authority Activities in 2004-2005**

The Research Authority takes part in professional meetings on research policy in Israel and abroad. Its representatives regularly participate in meetings with representatives of the European Union in Israel and Europe for updates and information. The Authority also maps and utilizes the extensive information of veteran Open University researchers concerning submitting requests to external funds and ties with various external funding bodies in order to assist young researchers.

**Research Authority Seminar:** This year the Research Authority conducted its first quarterly seminar on various issues relating to research policy in general and at the Open University in particular. The seminar aimed to encourage research activities and to provide relevant information to those involved in research at the OU concerning opportunities for support from sources in Israel and abroad.

**Workshops and Meetings:** The Research Authority conducts meetings and workshops intended for researchers from different fields on practical issues. One meeting was held this year for researchers in the field of information technology interested in submitting proposals to the EU and two additional meetings were devoted to the processes of submission to the Israel Science Foundation. The Authority also conducts orientation and update meetings in the academic departments to clarify the budget and information support available to researchers in different fields.

### **The Chais Research Center for the Integration of Technology in Education**

The first research center established at the OU acts to encourage research by University faculty with the aim of enhancing the integration of learning technologies in teaching. More than 30 faculty members from various OU departments are part of the Chais Center. The Center supports studies conducted by its members and awards grants to outstanding students pursuing advanced degrees. It conducts on-going academic activities in the form of symposia, workshops and research seminars. The Chais Center operates in close cooperation with *Shoham-R&D*.

## Research at the Chais Center

A sample of studies performed by members of the Chais Center this year:

- Studying dialogic behavior of students at the Open University
- Reciprocity in courseware networks
- Transitivity in learning networks
- Responsiveness in learning networks: A quantitative analysis
- Studies on challenges in collaborative online learning (decision dilemmas in collaborative online learning; scenario analysis of collaborative online learning)
- Teaching English in a computerized environment: Narrowing gaps between teachers and students
- Meeting the needs of poor EFL readers in online courses

## Center for the Study of Eretz Israel and its *Yishuv*

The Center for the Study of the Eretz Israel and its *Yishuv* was formally dedicated this spring as a partnership between the Open University and Yad Ben-Zvi. Its activities are administered by an academic committee. The aim of the Center is to initiate and encourage diverse research and teaching activities on the history of Eretz Israel by developing courses about Eretz Israel; initiating programs of study on Eretz Israel that are approved by University bodies and the Council for Higher Education; encouraging faculty research and providing support by awarding research grants and scholarships; awarding scholarships to encourage OU students to write seminar papers on topics related to Eretz Israel; granting awards to OU students for outstanding seminar papers; conducting symposia with the participation of researchers of Eretz Israel in various disciplines from Israel and abroad; conducting symposia for the general public on topics related to the study of Eretz Israel; publishing books on topics relating to Eretz Israel and the *yishuv*. The activities of the Center depend on donations.

## Learning Disability Resource and Research Center

In recent years, there has been a considerable increase in the number of students with learning disabilities. Most need to cope with difficulties in academic skills, such as slow reading, problems in written expression, spelling mistakes, and difficulties in English, mathematical thinking, memory, attention and concentration, organization and managing time. In addition, students with learning disabilities often have difficulties in social skills. All these are likely to impair efficient learning and impede success in studies.

In recent decades, the majority of leading universities in the United States have established resource and research centers that integrate advanced technology. These centers incorporate various units, each focusing on a different aspect of disability, such as a unit focusing on assistive technology; research laboratories; a unit for the detection and diagnosis of learning disabilities; a unit that provides individual and group assistance and treatment along with support services; a unit for the development and assimilation of education programs for individuals with learning disabilities, etc. These centers place great importance on collaboration between the academic faculty of the university and researchers from other universities.

It is very important to establish a center for learning disabilities at the Open University based on such a model. The proposed center aims to foster research on various aspects of learning disabilities, to help students with learning disabilities contend with their difficulties using assistive technologies, in the aim of helping these students at the Open University and other universities to successfully complete their studies.

A proposal to establish a center for learning disabilities has been submitted to the Open University authorities, and we are seeking funding.





## Awards and Honors

- **Prof. Sarah Guri-Rosenblit**, of the Dept. of Education and Psychology, was chosen as one of 30 scholars world-wide to take part in the Fulbright New Century Scholars program, devoted to the topic: Higher Education in the 21st Century: Global Challenge and National Response. Prof. Guri-Rosenblit's individual research is on: Digital Technologies and Higher Education: Sweeping Expectations and Moderate Effects.
- The 20th anniversary conference of the *Contemporary Accounting Research Journal* (CAR) to be held this year will honor **Prof. Haim Falk** in tribute to his extensive contribution to the establishment of the journal. CAR is the journal of the Canadian Academic Accounting Association and Prof. Falk was its founding editor. For many years, CAR has been ranked as one of the leading journals in its field in the world. In 1989, after Prof. Falk completed his term as editor, the Association of Accounting Professors in Canada announced an annual Haim Falk award to be presented to a scholar who has made a significant contribution to the field of accounting that would be awarded at the Association's annual meeting.
- **Prof. Yoram Eshet's** paper on digital literacy [Y. Eshet (2004) Digital Literacy: A Conceptual Framework for Survival Skills in the Digital Era, *Journal of Educational Multimedia and Hypermedia*, 13 (1), 93-106] was selected this year by *Library Instruction Round Table News* as one of the 20 leading papers of 2004. The journal focuses on literacy and librarianship, and each year it ranks the most important papers published in the field.
- **Prof. Yechiam Weitz** received two awards:  
The Yitzhak Ben-Zvi Award for his book, *From Fighting Underground to a Political Party – The Establishment of the Herut Movement, 1947-1949* (The Ben Gurion Heritage Center, Sde Boker, 2002).  
The Prime Minister Menachem Begin Award for his manuscript: *The First Step Towards the Seat of Government – The Herut Movement, 1949-1955*.
- **Dr. Haim Saadoun** received the Yitzhak Ben-Zvi Award for the series of books of which he is editor, *Jewish Communities in the East in the Nineteenth and Twentieth Centuries* (Jerusalem, Ben-Zvi Institute). The series aims to provide the general public with a comprehensive and systematic description of historical, social and cultural processes in Jewish communities in the East over the past two hundred years. Three of the fifteen volumes have been published (on Jewry in Yemen, Iraq and Morocco).