

# Research

Open University faculty members are involved in three primary academic areas: course development, teaching, and research. At the OUI, research represents a wide range of disciplines, including social sciences, humanities, natural and life sciences, exact sciences, and engineering.

The Dean of Research, Prof. Manor Mendel, has overall responsibility for the OUI Research Authority (RA), the research institutes, and adherence to research ethics. The dean of research also serves as chairman of the board of OpMop Ltd., the OUI's technology transfer subsidiary.

## The Research Authority

The Research Authority encourages faculty members to carry out research by helping them find external sources of funding, and assisting in submitting applications to those funds. The Authority also promotes research by providing direct support through an internal fund that offers research grants and scholarships, and covers travel expenses to international scientific conferences where the research results are presented.

The RA encourages OUI faculty research by providing assistance in locating external sources for funding and in submitting proposals. Likewise, the Authority promotes the work of OUI researchers by direct support from an internal fund which finances research grants, fellowships for research students, and travel for presentation of research at scientific conferences abroad.

The RA is responsible for the financial and administrative monitoring of research proposals which have received funding, as well as for managing researchers' budgets. It also sponsors workshops which assist applicants in submitting grant proposals to external sources. The Authority provides lab facilities and computers, recruits research students and assistants, and encourages collaboration between OUI researchers and colleagues in other academic institutions. Annual events showcase the latest OUI research.

The Research Authority Steering Committee is comprised of four senior faculty members from different disciplines, appointed by the OUI president. The committee, chaired by the dean of research, determines criteria for the allocation of funds, and for the evaluation of applications to the internal fund.

## News and Developments:

- Applications for research grants from the European R&D program Horizon 2020 were once again submitted this year through the Authority's research coordinator for EU programs. Professional consultants assisted the Authority in optimizing the submitted applications.
- The OUI was awarded, for the first time, the prestigious EU Horizon 2020 ERC grant.
- The Computer Authority continued offering assistance in improving the computerized revenue system, to enable more effective monitoring of external research grants.
- After reassessing research needs and submitted applications, the Research Authority Steering Committee has readjusted the criteria for research grant applications from the internal fund.
- Construction of the behavioral research laboratory in Ramat Aviv has been completed. The laboratory will enable the expansion and scope of research by faculty members.
- The Research Authority has been acting as a liaison between the researchers and various OUI administrative entities, including the human resources administration. With the remarkable increase in the number of research assistants, special arrangements will need to be made for data retrieval and certain computations.

## Research Centers

The three research centers at the Open University provide a scientific, institutional and practical framework for research, which allows interdisciplinary and reciprocal cooperation. The centers help researchers generate new scientific knowledge, participate in the mutual exchange of ideas, and foster cooperation with other researchers and experts in Israel and abroad.

### The Institute for Policy Analysis

The Institute for Policy Analysis, headed by Dr. Varda Wasserman, is an interdisciplinary center dedicated to the promotion of research on theoretical, empirical and applied subjects related to the interconnection between policy formation and implementation, and social, political, and economic processes and mechanisms. The Institute encourages research focusing on Israel and abroad, comparative studies, and research examining the global and international dimensions of policy design and implementation. In order to create a vibrant and productive research environment for scholars from different fields, the Institute organizes international and local seminars and conferences, publishes a series of working papers, and provides research assistance to its members.

The center was established in 2011, and its members include most of the OUI social science faculty. It focuses on policy analysis and current social issues. The management is aiming to increase the number of its members, expand the functions of its research groups, and sponsor seminars and study groups resulting in publications. So far, two publications have been issued on military service of the ultra-Orthodox, and militarization of the education system. This will be followed by publication of a collection of articles on employment of the ultra-orthodox and policy scenarios, in conjunction with a refereed journal.

During the past year, the institute published a collection of scientific articles on militarization of the education system, sponsored an international symposium on corporate responsibility in Israeli industry, and received a follow-up grant from the Ministry of Science for the study of policies promoting women.

### Research Center for Innovation in Learning Technologies

This research center, headed by Dr. Nitza Geri, explores the integration of innovative technologies with teaching and learning processes. The Center encourages studies by OUI faculty members aimed at improving the understanding of teaching and learning processes in a technology-rich environment, and integrating new technologies into the teaching of courses in the academic world in general, and the OUI in particular. The Center was established in 2010 to replace the Chais Center for the Integration of Technology in Education, which was founded in 2004. Fifty faculty members from various departments are currently carrying out research at the Center, in addition to a part-time research fellow. The Center works in close cooperation with the Shoham Center for Technology in Distance Education, and focuses on forging close professional ties among members of the Israeli research community. To this end, regular academic events are held, including research seminars, symposia, and conferences.

In 2015-2016, the center held three symposia which were open to the general public: Computerized Means in the Teaching of Statistics, in conjunction with the Israeli Statistics Association; Women Lead Online Commerce, with the Israeli Internet Association, to mark International Women's Day; and a day-long symposium hosting guest lecturers from the Chais 2016 Conference, on motivating Wikipedia editors, and effective design studies. Seven seminars were held, in which members of the Research Center for Innovation in Learning Technologies, guest researchers, and post-graduate students (supervised by advisors) presented their research.

Selected studies conducted with the support of the Center are listed below:

**Lilach Alon and Dr. Avner Caspi:** "The Effect of Virtual Instructor on Self-discrepancy, Self-efficacy and Learning Achievements"

**Dr. Ina Blau and Prof. Yoram Eshet:** "Predictors of Digital and Analog Academic Dishonesty among School Students: The Role of Ethics"

**Prof. Nitza Geri and Amir Winer:** "Interactivity and its Implications on Learning through Online Video Lectures"

**Dr. Yoram M. Kalman, Prof. Gitit Kave, and Dr. Daniil Umanski:** "Writing in a Digital World: Self-Correction While Typing in Younger and Older Adults"

**Liora Mekamel and Dr. Ina Blau:** "How a Mentoring Social Network Can Become an Assistive Technology for Students with Communication Disabilities and Students with Intellectual Impairments"

**Dr. Vered Silber-Varod, Prof. Yoram Eshet, and Prof. Nitza Geri:** "Analyzing the Research Discourse of Innovation and Learning Technologies via a Data-driven Approach"

**Orli Weiser, Dr. Ina Blau, and Prof. Yoram Eshet:** "Synchronous Learning – Face-to-face, One-way and Two-way Videoconferencing: The Role of Teaching-Learning Strategies, Personality Traits and Media Naturalness"

### Chais Conference 2016

The 2016 Chais Conference was the eleventh in a series of annual research conferences on learning technologies organized by the Research Center for Innovation in Learning Technologies. The conference provides a forum for prominent researchers and development professionals in the field of innovative learning technologies in Israel, and offers a platform to present their studies and advancements in the field. The conference contributes to shaping Israel's learning technology research community and establishing the Open University as a leader in implementing the latest technologies.

Approximately 550 academics from institutions in Israel, as well as from other organizations and companies attended the event. At the conference, 39 articles and posters were presented, including a guest lecture on civilian science by Prof. Kevin Crowston of Syracuse University, and on innovation and design studies by Prof. Alan Hevner of South Florida University. Selected articles from the conference are published every year in a special issue of the *Interdisciplinary Journal of e-Skills and Lifelong Learning*.

### The Center for the Study of Relations between Jews, Christians, and Muslims

The Center, headed by Prof. Mustafa Kabha, numbers approximately forty members, mostly from the OUI, and some from other academic institutions. The center is attracting many researchers in Israel and around the world,

some of whom have joined the center's research community to participate in its initiatives and to promote the study of interfaith relationships. The center's varied research also contributes to its public mission – the deepening of interfaith dialogue between the three monotheistic religions, and the sharing of research with the public at large.

### Research groups sponsored by the center:

- A group studying different aspects of early Christianity and Jewish-Christian relations in the early centuries C.E. numbers thirteen members from the OUI and from other academic institutions. Group members are currently working on a collection of articles to be titled *Early Christianity and Ancient Judaism: Identity, Orthodoxy and Deviancy*. During the past year, the group held several meetings in which lectures were given by its members and by guest lecturers researching the same fields: Doron Wilfand, "Shema in Matthew and Mark – Philology and Theology in the book of Matthew, and its Significance as an Ostensibly 'Jewish' Book"; Dr. Jonathan Bourgel, "The Image of the Pharisees in Pseudo-Clementine Literature"; Dr. Serge Ruzer, "Early Christian Tradition: A Premeditated Innovative Move or a Testimony of Broad Trends in Judaism?"
- A group studying "Shaping Boundaries – Defining Identity in a Multi-Religious and Multi-Cultural Environment." The group is made up of four researchers from the OUI and from other academic institutions, and three research assistants. The group completed writing its research work of the past few years, and it has been submitted for publication in *Israel Studies*.
- A group of 17 OUI researchers, studying "Time: History, Theory, Culture", and underscoring the way in which the three monotheistic religions contend with the issue of time. Two meetings were held: Dr. Ishay Landa, "Fascism between Progressive and Regressive Times"; Dr. Orr Scharf, "Time and Era Changes – Between Franz Rosenzweig and Martin Heidegger."

## Divan workshops – presenting and discussing research, and meeting with veteran researchers

- **Roy Marom**, Department of Middle East and African History, Tel Aviv University, "Ali Qassem Abd al-Qader: Inter-Religious Local Leadership in the Sharon During the British Mandate."
- **Prof. Israel Gershoni**, Department of Middle East and African History, Tel Aviv University, "Ahmad Lutfi a-Sayed Revisited."
- Meeting in memory of Dr. Hagar Hillel: **David Guedj**, School of Jewish Studies and Department of Jewish History, Tel Aviv University, "Hebrew Culture in the French Language: The Status of the Hebrew Language and Culture in Morocco Between Two World Wars, as Reflected in the Journal *L'Avenir Illustré*". **Tamir Karkason**, Department of Jewish History and the Mendel School of Advanced Studies in the Humanities, The Hebrew University of Jerusalem, "The Sephardic Target Audience and the Jerusalem Press in the Late Ottoman Era."
- **Prof. (Emer.) Haggai Erlich**, Department of Middle East and African History, Tel Aviv University, "The Victory of Christian Ethiopia – Ras Alula, a National Hero."
- **Prof. (Emer.) Aviva Halamish**, Department of History, Philosophy and Judaic Studies, the Open University, "Tiberias as a Test-Case of Jewish-Arab Relations in a Mixed City During the British Mandate."
- **Dr. Nahum Karlinski**, The Ben-Gurion Institute for the Study of Israel and Zionism at Ben-Gurion University of the Negev, "A Fresh Look at the 'Mixed Cities' During the British Mandate."

## International Workshops and Conferences:

- The fifth annual JCM conference: "Religion and Government: Judaism, Christianity, Islam"
- Workshop in conjunction with Bochum University, Germany, and the Ben Zvi Institute, on "Eastern Jews and Christians in Interaction and Exchange in the Islamic World and Beyond." The lectures given at the workshop will be published in the e-Journal *Interdisciplinary Journal for the Study of Religious Contact and Transfer*.

## Collaborative Agreements

- The Open University collaborates with outside academic institutions in order to provide the infrastructure necessary to enable OUI faculty members to conduct experimental research. Several years ago, the OUI and Tel Aviv University signed a joint agreement allowing OUI faculty members from various scientific and experimental fields to conduct ongoing research using the infrastructure available at Tel Aviv University. The contract with The Hebrew University of Jerusalem was extended, which enables Dr. Yair Ben-Chaim, of the OUI Dept. of Natural Sciences, to conduct research in the Department of Neurobiology at the Institute of Life Science of The Hebrew University of Jerusalem.

Negotiations continue to locate suitable laboratory spaces for use by senior OUI faculty members for their research.

## Research Code of Ethics

The Institutional Ethics Commission is entrusted with ensuring that research conducted at the OUI respects the code of ethics of different scientific disciplines as well as all OUI ethical criteria. The Commission has six senior faculty members representing different subjects – exact sciences, social sciences, and humanities. Among other issues, the Commission has addressed adaptation of the code of ethics for approval of research at the OUI to the code in effect in the European Union, and the formulation of a procedural regulation for surveys for the purpose of supervising the number of times OUI students are approached for purposes of internal or external research.

In addition to the general OUI committee, four departmental sub-committees are each chaired by a member of the general OUI committee from the relevant field, and include senior faculty members and lecturers in that field. The ethics committee of the Education and Psychology Department has handled issues brought up by students and researchers in this field.

## Individual Research Grants by External Funds

During the past year, 12 research grants and fellowships were approved by external funds.

## Grants from the Israel Science Foundation

- **Prof. Tzahi Weiss**, Dept. of Language, Literature, and the Arts, "Commentaries on the Ten Sefirot"
- **Dr. Alexandra Meiri and Odeya Cohen-Raz**, Dept. of Language, Literature, and the Arts, "Narrative Cinema and Psychoanalysis: Desire, Fantasy and the Ethics of Subjectivization"
- **Dr. Yehuda Matza**, Dept. of Natural and Life Sciences, "Novel therapeutic approach for NSCLC based on blockade of Cav Calcium channels"
- **Dr. Ravit Nusanson**, Dept. of Education and Psychology, "Up there and down here: Perceptual simulation along the vertical dimension as an embodiment of psychological distance"
- **Dr. Michael Feigenblatt**, Dept. of History, "Analyzing Levinas: Second-person normativity and the metaphysics of mind"
- **Dr. Eran Fisher**, Dept. of Sociology, Political Science, and Communication, "How do algorithms imagine their audience? A study of digital media professionals"
- **Dr. Moran Feldman**, Dept. of Mathematics and Computer Science, "Practical algorithms for submodular optimization"
- **Dr. Reut Tzarfaty**, Dept. of Mathematics and Computer Science, "Robust, broad-coverage, cross-linguistic semantic parsing"

Two of the studies awarded grants are described below:

### **Prof. Tzahi Weiss: Commentaries on the Ten Sefirot**

The theosophical Kabbalistic literature, which appeared during the end of the 12<sup>th</sup> century CE, discusses the role and the function of the heavenly realm and its ten emanations known also as the ten *Sefirot*. One of the most popular genres of the Kabbalistic literature is that of the commentaries on the ten sefirot. This genre includes detailed lists of names, symbols and discussions about each *sefirah*.

In 1933, Gershom Scholem published 'A Key to the Commentaries on the Ten *Sefirot*' a short index which specifies 134 distinct compositions all of which discuss, in one way or another, the meanings and the interpretations of the ten *sefirot*. Scholem in his short and important study, referred very briefly to these manuscripts however, he did not analyze them and was not aware of all of them.

The main purpose of this research proposal is to give scholarship a clearer picture of this kabbalistic genre and a better approach to its content. In this research Prof. Tzahi Weiss and Dr. Na'ama Ben-Shachar will publish an extensive and updated catalogue of the commentaries to the ten *sefirot* which will include commentaries that Scholem was not aware of, bibliographical information that can be found about each commentary and discussion about their content and context. This project also includes the publication of twenty to thirty commentaries that have as yet not been printed.

### **Dr. Reut Tzarfaty: Robust, Broad-Coverage, Cross-Linguistic Semantic Parsing**

The ability of computers to comprehend human language has always been the hallmark of artificial intelligence, and it is being extensively investigated within a field of research called natural language processing (NLP).

Much of NLP research is devoted to the development of *parsers* – computer programs that accept an utterance in a human language as input, and automatically recover its underlying linguistic structure as output – but this linguistic structure may be of various sorts: reflecting different levels of linguistic analysis: *morphological* parsing identifies the internal structure of words, *syntactic* parsing recovers the structure of sentences, *semantic* parsing assigns logical forms to sentences, that reflect their meaning, and *discourse* parsing recovers the rhetoric and pragmatic structure of complete conversations or documents.

The present proposal focuses on semantic parsing. Ideally, semantic parsers would replicate the human ability to assign meanings to utterances at multiple dimensions: this includes the static dimension (the entities, their relationships, their properties), the dynamic dimension (processes, events, actions allowed or forbidden, order of events, timing constraints), and other, pragmatic dimensions (speech acts, speakers' intentions). From a monolingual perspective, this range of meanings may be realized by any of the different levels of the linguistic structure. Some of these elements may be realized syntactically, via sentence arrangement, some may be realized morphologically, via word-internal structure, and some may be reflected in the structure of the discourse. From a cross-linguistic perspective, however, the division



of labor between morphology, syntax, and discourse structure in expressing the different dimensions of meanings differs across languages. The key hypothesis underlying this research is that by adopting an inclusive view of realization – employing the full arsenal of relevant linguistic forms – we will be able to devise semantic parsers for different languages, that can recover this wide range of meanings.

In this work we will develop a language-independent parsing engine, which relates morphological, syntactic, discourse markers to logical forms representing diverse (static and dynamic) meanings. The solution I propose builds on vast work in combinatory categorial grammar (CCG) and relies on three methodological assumptions: (i) we define a noisy-channel model where the enriched CCG derivation is a message to be decoded, and the linguistic utterance is seen as the evidence encoding it, (ii) we model the linguistic evidence as a joint model over word-structure, sentence-structure and discourse markers, and, (iii) we predict the mappings between texts and semantic structures via statistical learning, relying on the mixed signal of morphological, syntactic and discursive aspects of the utterance.

The semantic parsing engine, along with its enriched output, will have vast applications in artificial intelligence, robotics, data mining and cognitive computing. Moreover, the cross-linguistic perspective we employ here will extend the empirical reach of semantic parsing to a range of different languages which currently do not enjoy these technological benefits – with particular attention to Semitic languages.

### Publication grants

- **Hagit Cohen**, *Wonders of the New World: Books and Readers in Yiddish in the United States, 1890s-1940s*
- **Esti Eisenmann**, *The Commentary of R. Mordekhai Ben Eliezer Komtiyano on the Guide of the Perplexed*

### Grants from other external funds

- **Dr. Reut Tsarfaty**, Department of Mathematics and Computer Science, received an ERC grant for research on "Natural language Programming: Turning text into Executable Code."

- **Dr. Yael Sela-Teichler**, Department of Literature, Language and the Arts, received a GIF Young Scientists' grant for research on "Moses Mendelssohn and the Negotiation of Jewish Modernity in Words and Music in late 18th-Century Berlin."

### Other grants

- **Dr. Bashir Bashir**, Department of Sociology, Political Science and Communication, received a Maof grant from the Council for Higher Education.
- **Dr. Moran Feldman**, Department of Mathematics and Computer Science, received an Alon grant from the Council for Higher Education.
- **Dr. Oren Shlomo**, Department of Sociology, Political Science and Communication, received a Fulbright Post-doctoral fellowship.

### Research Grants and Scholarships from the Internal Fund

The OUI provides financing for its researchers to leverage their work and facilitate their applications to external funds. In 2015-2016, the Research Authority received 102 applications for funding from the internal fund, of which 78 applications (76.5%) were approved.

### Honors and Awards

- **Dr. Izhak Berkovich**, Dept. of Education and Psychology, was awarded the 2015 EFMD Emerald Prize for an outstanding doctoral dissertation in the field of leadership and strategies in education.
- **Prof. Tal Hassner**, Dept. of Mathematics and Computer Science, was awarded the Biometrics Research Award by the The Biometric Applications Commissioner, Israeli Prime Minister's Office.
- **Oz Cohen**, a master's student in the field of interdisciplinary democracy studies, was awarded a prize by the Jabotinsky Institute for his seminar paper, supervised by Dr. Idit Gil.
- **Dr. Gadi Sagiv**, Dept. of History, Philosophy, and Judaic Studies, has been chosen to be a member of the Young Scholar's Forum in the Humanities of the Israel Academy of Sciences.

- **Dr. Oren Shlomo**, Dept. of Sociology, Political Science, and Communication, received the 2015 Outstanding Doctoral Dissertation award from the Israeli Political Science Association (aguda).

## The Open University of Israel Press

The Open University of Israel Press, which was established in 2014, publishes original research and academic titles in all disciplines. In 2016, it published its first books:

- **Hagit Cohen**, *The Wonders of the New World: Yiddish Books and Readers in the USA, 1890-1940*
- **Yaacov Shavit** and **Yehuda Reinherz**, *A Lecture on Orientalism: Essay in Memory of Ernest Regan, with introduction and commentary*

During the past year, the press has received dozens of manuscripts. Following a rigorous peer review process, five titles were approved for publishing in 2017.

This year, the press announced a second round of Goldberg Prizes for Exceptional Academic Manuscripts. A 40,000 NIS prize was offered for an exceptional manuscript by an author who has already published at least one nonfiction book, and a NIS 20,000 prize was offered for an exceptional first book. Two committees, whose members come from different universities, have reviewed the twenty manuscripts submitted. The prize winners were declared in early November 2016, and on December 5, 2016 the university held a double ceremony in which the Goldberg prizes for 2016 were awarded, and the first books published by the OUI press were launched.

The OUI Press is headed by Prof. Aviva Halamish, and the other members of the editorial board are Prof. Sarah Guri-Rosenblit, Prof. Amir Horowitz, and Prof. Motti Regev of the OUI; Prof. Tamar El Or of The Hebrew University of Jerusalem; Prof. Mahmoud Ganaim of Tel Aviv University; Prof. Katrin Kogman-Appel of the Westfälische Wilhelms-Universität; and Prof. Shezaf Rafaeli of the University of Haifa.

## Megamot

In April 2014, the OUI signed an agreement with the Henrietta Szold Institute for joint publication of the journal *Megamot*. Last year, two extended issues of the journal were published, and the OUI held a conference on the 65<sup>th</sup> anniversary of the journal. At the conference, senior Israeli social-science researchers reviewed the state of research in different fields, and their collected lectures will appear in a special issue. The high point for 2016 was the launching of a website and digitization of the journal. All issues published since 1949 are accessible on the site, and the content is accessible to all institutions and individuals subscribed to the journal.