Migal – Galilee Technology

STEINBEIS-EUROPA-ZENTRUM

enterprise europe network

Profile ID: KHE-IL-01

Title:
Elucidating the ability of different pomegranate varieties to inhibit the proliferation of prostate cancer cells and examining the nature of their bioactive compounds

Short Description of Research: The message that individuals should try to consume a variety of fruit and vegetables that are rich in antioxidants is the basis of many government-sponsored social education programmes. Although the health-promoting effects of plant bioactives were originally attributed to their antioxidant capacities, there is increasing evidence that many of their biological effects are actually related to their ability to modulate mammalian cell signalling pathways. Consequently, the scientific basis for the strategy of improving health through diet is largely missing. The aim of the topic is to better understand the role and biological modes of action at the molecular, cellular and whole organism levels of plant bioactive compounds. A greater understanding of the roles of bioactives in promoting health will lead to the design of improved foods and recommendations for consumers concerning the specific contribution of individual bioactives in foods. Clinical/nutritional trials are recommended to support new recommendations. Scientific data on the risks and benefits linked to these compounds as well as factors influencing their functional properties will be produced and evaluated.

Expected Funding scheme: 7th Framework Programme, Small Collaborative Project / Relevant Call: FP7-KBBE-2009-3

Expected impact: The European added value is to promote synergistic interaction at European level by integrating the expertise of plant biotechnologists, geneticists and (bio)chemists with researchers in the fields of nutrition, microbiology, medical pharmacology and clinical epidemiology. The new food formulation with nutrition and health claims will increase European competition and trade opportunities. European recommendations for the promotion of health will be developed by taking into account the diverse European eating patterns. The results will provide sound scientific data to support the European common policy on health and nutrition claims.

Detailed Description of Research: Biological studies have proven that certain compounds contained in pomegranate (Punica granatum L.) juice, has been shown to reduce the initiation and development of several types of cancers. These activities are attributed to the pomegranate's high level of antioxidant activity and its high total polyphenol content. We aimed to examine the ability of pomegranate juice (PJ) in inhibiting the proliferation of prostate cancer cells. Prostate cancer is the third leading cause of cancer deaths worldwide, and studies have shown that in addition to genetic susceptibility, consumption of antioxidant and polyphenols-rich diet, including PJ, reduced the risk of this cancer. However, the mode of action and the mechanism are not yet clarified. By using several experimental systems, we intend to elucidate the role of PJ in some transcription factors and enzymes that play a major role in the initiation and development of this cancer. The study will be preformed by using different PJ from 30 different varieties that differ in taste (from sweet to sour) and in colour (from lilac-black to white or even green, through dark-red, red, orange and pink). Since the juice of these varieties will be tested for their abilities to inhibit the proliferation of prostate cancer cells, it will also enable us to identify the best varieties exhibiting the highest anti-cancer activity. In order to identify the anti-cancer compounds that affect the activity of these factors and enzymes, we plan to use metabolomics tools such GC-MS, which enable us to screen dozens of metabolites. The results of this study may not only lead to the expansion of pomegranate orchards having improved health characteristics but also to support future pomegranate-associated industries utilizing pomegranates for preparing PJ with higher health properties, and for production of medicinal compounds.

Research collaboration sought: 30 pomegranate varieties that differ in their antioxidant activity and in their content of polyphenols compounds are being studied. The collaborators that may integrate to this project can be for example those who have bio-assays (such as cancer cell lines or systems to detect the arthrosclerosis plaque) that can be used to examine the abilities of the pomegranates to affect these systems.

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STEINBEIS-EUROPA-ZENTRUM

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Profile ID: KHE-IL-02

Title:
Eco-metabolism in mushrooms

Description of research: Mushrooms, especially edible mushrooms, are increasingly studied in regard of their beneficial metabolites, improving human health. In our lab we focus on the interactions between ecological conditions and metabolites production in mushrooms in order to increase the production of the beneficial metabolites. This includes study on relationships between species and ecotypes diversity and metabolite production, in both from wild harvesting or cultured mushroom mycelium. The metabolites under the current study are antioxidant and different enzymes involve in acclimation of fungi to the different habitat such as laccase and celullase.

Research collaboration sought: Collaboration with a group that studies similar aspects in other European mushroom species, to compare European ecotypes with Israeli Ecotypes.

Profile ID: KHE-IL-03

Title:
Search for new antibiotics

Description of research: Increasing resistance is developed in infectious fungi and bacteria to current applied antibiotic lead to a need for new antibiotics or application methods. In our lab we search for new antifungal and antibacterial metabolites from local bacteria and fungi. The study involves isolation of the microorganism, screening bioassay for the antibiotic activity, and then purification and identification of the active compound, and study of the inhibition mechanism. Currently we study antibiotic production from local isolated bacterium.

Funding scheme:

Research collaboration sought: We are looking for collaboration with a group that will contribute in study of the bacterial inhibition mechanism.

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STEINBEIS-EUROPA-ZENTRUM

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Profile ID: KHE-IL-04

Title:
Role of reactive oxygen species in the induction of lignin peroxidase expression in the white-rot fungus Phanerochaete chrysosporium

Description of research:
The white-rot fungus Phanerochaete chrysosporium can degrade and metabolize lignin, as well as a broad range of recalcitrant organopollutants, more extensively than other organism. Its lignin degrading system consists of two families of hydrogen peroxide (H_2O_2)-requiring extracellular heme-peroxidases designated lignin peroxidase (LIP) and manganese-dependent peroxidase (MNP). LIP possesses higher redox potential than any other peroxidase, enabling it to oxidize a wide range of pollutants.

Liquid cultures of P. chrysosporium must be starved and exposed to a pure O_2 atmosphere or, in turn, starved and growth with deficiency of manganese ions (Mn^{2+}) to trigger LIP expression. The high O_2 concentration or Mn^{2+} deficiency, stimulate increased production of reactive oxygen species (ROS), subjecting the fungus to remarkable oxidative stress.

Since the production of LIP in liquid cultures of P. chrysosporium occurs either when they are flushed with O_2 or when Mn^{2+} is deficient, the objective of the present study is to examine whether the way in which Mn^{2+} deficiency triggers LIP synthesis is similar to that which occurs with O_2, i.e., whether the mechanism involves ROS.

In oxygenated cultures, increased expression of MnSOD was the major response of the antioxidant system. In contrast, in Mn^{2+}-deficient cultures, negligible activity of MnSOD was detected.

The existence of oxidative stress in LIP-producing cultures led to the hypothesis that ROS, and hydroxyl radical (OH•), in particular, may act as intracellular messengers. Since the difference between both types of LIP-producing cultures consist in activation or lack of MnSOD activity, it is possible that ROS production in general and OH• generation in particular occurs by different mechanisms. The long-term objective of this research is to study the role of ROS in the regulation or induction of LIP expression in the white-rot fungus P. chrysosporium as well as the sources, ways and mechanisms of their generation.

To determine the sources of the intracellular messengers in LIP-producing cultures, specific inhibitors of ROS (e.g., superoxide anions, nitric oxide radicals, hydrogen peroxide) will be exogenously added and transcription of LIP will be tested. In situ generation of superoxide anions (via paraquat), and OH• (via Fenton reaction) and addition of H_2O_2, to non LIP-producing cultures, at concentrations that will not be deleterious to the viability of the fungal cells, will help understand the role and influence of each of these ROS in LIP expression. The construction of conditional MnSOD(-) mutants will enable us to ascertain the role or influence of MnSOD, Mn^{2+} ions as well as other antioxidant enzymes in the production of the relevant ROS necessary for LIP induction.

Research collaboration sought:
The results of this research are expected to advance the understanding of the pathways, sources and nature of ROS as second messengers in LIP expression. Complementary researchers are sought.

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STEINBEIS-EUROPA-ZENTRUM

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Profile ID: KHE-IL-05

Title:
Heterologous expression of the isozyme lignin peroxidase H2 of Phanerochaete chrysosporium in Picchia Pastoris

Description of research:
The white-rot fungus Phanerochaete chrysosporium can degrade and metabolize lignin and a broad range of recalcitrant organopollutants. Lignin depolymerization is achieved primarily by one-electron oxidation reactions catalyzed by extracellular oxidases and peroxidases in the presence of extracellular hydrogen peroxide (H_2O_2). Lignin peroxidase (LIP) is considered one of the most important enzymes of the extracellular lignin degradation system secreted by P. chrysosporium. Several LIP monomeric haemolglycoproteins isoenzymes (38-43 KDa) have been identified from the fungus, and LIP H2 and its dephosphorylated form, H1, have been found to be the most predominant LIP isoenzyme expressed.

LIP oxidizes phenols to phenoxy radicals and non-phenolic aromatics to radical cations. It possesses a higher redox potential than any other peroxidase and has been reported to oxidize a wide range of aromatic compounds with calculated ionization potential (IP) values of up to 9.0 eV. The ability of LIP to oxidize such a range of compounds suggests its potential in the biocatalytic conversion of aromatic compounds. They are also of agricultural, industrial and environmental importance on account of their role in lignin and in a broad range of organopollutants biodegradation, such as degradation synthetic textile dyes and natural pigments, and detoxification of a broad range of toxic xenobiotics from wastewater.

Potential applicability of LIP depends on the ability to produce high quantities of the enzyme by efficient growth and purification technologies.

Lignin peroxidase production by submerged fermentation of P. chrysosporium is hampered by several factors, such as expression under nutrient limitation together with oxidative stress, and in the sensitivity of this basidiomycete fungus to high shear forces in a fermenter. Moreover, the purification stage of the enzyme from the growth liquid medium of P. chrysosporium is tedious and expensive.

Homologous expression of LIP in yeasts can be an alternative and more efficient process for LIP production, since less incubation time is needed for the organism growth and only LIP-H2 could be expressed, avoiding the purification step from other isoenzymes.

Genes encoding ligninolytic enzymes in the white-rot fungi have been cloned and expressed in different hosts. Heterologous expression of the lignin peroxidase in baculovirus expression systems was reported but only a low activity of peroxidases was detected in the growth medium. In Escherichia coli, LIP-H8 was expressed as inactive inclusion bodies although inactivation was obtained in vitro. It was also expressed in Aspergillus niger under the control of plant nopaline synthase promotor and terminator but extracellular lignin peroxidase activity in these construct was weak.

Research collaboration sought:
The present study adresses the production of lignin peroxidase H2 in the yeast Pichia pastoris.
Work program
1) Cloning of the encoding region of LIP-H2 into the expression vector pPIC9 from the expression system of Picchia pastoris (invitrogene).
2) Transformation to P. pastoris.
3) Induction of LIP enhanced expression, collection and purification of the secreted enzyme
4) Structural and activity comparison between the enzyme expressed by P. pastoris and the enzyme produced by P. chrysosporium

DEUTSCH-ISRAELISCHES Jahr der Wissenschaft und Technologie 2008
שנת שיתוף הפעולה המדעי והטכנולוגי ישראל-גרמניה 2008

Federal Ministry of Education and Research

Israel Ministry of Science, Culture & Sport (MOST)

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STEINBEIS-EUROPA-ZENTRUM

enterprise europe network

Profile ID: KHE-IL-06

Title:
Isothiocyanates (ITCs) as potential anti-psoriasis bioagents in a cytokine-activated keratinocyte model

Description of research:
Our overall objective is to evaluate the anti-psoriatic potential of the isothiocyanate phytochemicals. We aim to identify and characterize their cellular target(s) and protective mechanism(s) in an updated in vitro model and to design the optimal ITC-based molecules, which would be safer and more effective. Our major aims are to:
1. Update a cytokine-activated keratinocyte psoriasis model.
2. Screen and characterize isothiocyanates from cruciferous sources for their potential effectiveness against psoriasis.
3. Study the active ITCs for their cellular target(s) and protective mechanism(s).
4. Design and synthesize new ITC-derivatives, which would be safer and more effective, based on the structure-activity data collected from the above studies

Profile ID: KHE-IL-07

Title:
Magnetic cell separation to fight against virus infections

Description of research:
No therapy has yet been found for most viral diseases. We will try to develop an assay for separation viruses from peripheral blood by targeting and removing viruses and virus-infected cells with a specific magnetic-molecule conjugates in magnetic field. This approach can be used in the future as a dialysis-like cure.

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STEINBEIS-EUROPA-ZENTRUM

enterprise europe network

Profile ID: KHE-IL-08

Title:
Hippotherapy for children with Developmental Coordination Disorder

Description of research:
Hippotherapy and therapeutic horse back riding are known treatments, using the movement of the horse by special professionals, in order to promote movement abilities and activities of daily living. It has been studied as a useful treatment for disorders such as Cerebral Palsy (CP) but not yet for Developmental Coordination Disorder (DCD). DCD is a common (6%) mostly chronic disorder characterized by marked impairment in the development of motor coordination, significantly interferes with academic achievement or activities of daily living and has meaningful secondary effects through lifetime. Hippotherapy and therapeutic horse back riding are used for DCD using a wide theoretical base.

In the Child Development Center in "Ziv" Hospital Israel a broad, multi-professional staff treats children from birth to adult hood with all different emotional and physical difficulties and disabilities. We have a CP group who uses hippotherapy and horse back riding on a weekly basis. The DCD groups can not yet use this tool though it is very expensive and not yet recognized by the authorities. We have the ability to diagnose the preschool DCD population (by standardized test and questionnaires), send them to different kinds of treatments and settle up a longitudinal randomized controlled study.

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Profile ID: KHE-IL-09

Title:
Using data collected by field pest scouts using dynamic web-based mapping system to learn about the temporal and special dynamic of pest to enhance sustainability

Description of research:
The objective of pest management is not only to reduce pest numbers and the potential for crop damage but also to conserve environmental quality and furnish sustainable production systems. This approach considers agricultural modality as an ecosystem created and maintained by human actions. Ideally, this view imposes a holistic approach to pest management, addressing all the potential pests and diseases at an area-wide scale.

Dispersal of pests and pathogens is temporally and spatially dynamic, responding to a variety of biotic and abiotic conditions. Pest management practices on one crop or field affects directly or indirectly the neighboring hosts. Therefore, measuring and understanding temporal and spatial dynamics of pests is a fundamental component for wide area pest management that will enhance sustainability. Pest dynamics such as invasion, long range migration, local movement, and population fluctuations are documented through pest surveillance.

The main obstacle in this approach is that accumulating and analyzing sufficient information on pest location in time and space is labor intensive and expensive, and thus seldom achieved. The availability of geospatial information technologies is a significant opportunity for wide area data collection and the management of temporal and spatial dynamics of the agricultural environment.

The objective of my research is to accumulate pest survey data collected by numerous field agents, and to use this data to enhance pest management programs. My colleagues and I are developing a system for gathering data on pest populations and rapid transfer of this data to a central database. This data will then be disseminated to support decision making for pest management at various scales ranging from the level of individual farm to the level of a larger region. The data will also be of significant value for research on temporal and spatial dynamics of pest populations. Early detection and timely information is critical to reduce economic impact of pests.

Research collaboration sought:
The specific objectives of this project are: Develop a system for rapid data acquisition, mapping, interpretation and reporting of field collected data; develop and adopt standard data collection methods and technology for use by field staff; evaluate and incorporate the parameters needed to support decision-making pertaining to pest management; Improve response time for pest through the use of digital imaging; and to test and evaluate the performance of the system in infestation monitoring and control applications.

The methodology is to create a system composed of data collection, repository, and dissemination modules. The primary data collection tool is a cellular phone device, serving as a data terminal, thus providing two-way communication. Web technology is used to manage and disseminate information. This enterprise involves a challenge of assimilation and application of data collection protocols to create a unified reporting methodology and measures among pest-scouts.

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Profile ID: KHE-IL-10

Title:
Prevention and management of weight-related problems
Family-based intervention for healthy eating habits in the house

Description of research:
Background: Obesity and eating disorders represent an increasingly common problem that is associated with a variety of public health issues. There is a consensus that interventions to prevent and treat weight-related problems should involve the family; however, the preferred role of parents and the extent of the child's involvement are unclear.
Objective: The goal of this study is to evaluate the relative efficacy of reducing the obesogenic load within the family environment and improve the children and parents weight status via a family-based health-centered intervention by targeting parents alone versus parents and obese children in separated groups.

Specific aims: To study the acceptability, efficacy and success predictors of the parent-only health-centered intervention to parents and offspring from different ages (children and adolescents) and different ethnic groups; To compare the parent-only condition to parent & child condition when treated in separated groups; To study therapist characteristics that might influence the outcome; To establish an Hebrew and German manual for international purposes (The English manual is in print).

Project design:
Phase I: Health professional's training in Israel and Germany – 10 days - 6 hrs per day
Phase II: Establish an Hebrew and German Manual for heath providers
Phase III: Two sets of randomized clinical interventions will be performed in order to compare the parents-only condition with the parent and child condition (separate groups for children and parents):
1. Sixty families with obese children aged 6–11 years old, mixed ethnic groups
2: Sixty families with obese adolescents aged 12-18 years old, mixed ethnic groups.
Participants will be provided with a comprehensive educational and behavioral program for a healthy life style. The groups will differ in their main agent of change: parents only vs. the parents and the obese child or adolescent, in separate groups.

Hypothesis: Child involvement in family-based intervention is disadvantage in comparison to a parents-only intervention, when children are 12 years old and less; Adolescents and parents targeted in separated groups will be found superior to the parents-only intervention.

Profile ID: KHE-IL-11

Title:
Integration of immigrant families in Germany

Description of research:
Carry out a longitudinal mapping of migrants and investigate how the relationship with the country of origin maintains personal relationship over time and affects the acculturation in the host country. Study factors affecting crisis in women, as members of immigrants groups, in their status in the family and their ability to overcome the crisis of migration. Identify resilience factors such as self-esteem, hope in immigrant members of families (differentiate between genders); Identify vulnerable age groups (i.e. 11-14 years old) in areas of deprived and/or marginalized communities, and investigate their acculturation and integration. Carry out a follow up study in the first and second generation of immigrants in a trans-national study, particularly of refugees, based on interviewing the communities involved with focus on loss and gain of resources and resilience mechanisms in adaptation in their country of destination.

Profile ID: KHE-IL-12

Title:
The increasing role of economics in EU competition law and policy

Description of research:
The research pertains to the increasing role of economics in EU competition law and policy. The legal question, whether it is one of abusive conduct by a dominant undertaking, or lessening of competition by merging parties, is essentially an economic question, requiring competition authorities to analyse the market under investigation throughout an economic lens. Moreover, economic expertise is increasingly evident among antitrust officials, particularly following the establishment of the Chief Economist's Office in 2003 and its team of specialised economists. Given the steady growth in economic inputs, mani-fested, for example, in the promulgation of the 1997 Commission's Market Definition Notice, the 2004 revision of the Merger Regulation and the ongoing review of Article 82, the research intends to focus on the 'more economic approach' to European competition law, and its ramifications to antitrust practice.

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Profile ID: KHE-IL-13

Title:
Promoting businesswomen in the northern Israeli periphery

Description of research:
A research project is planned for promoting businesswomen in the northern Israeli periphery. It also includes comparison to parallel project in Jordan. The project is sponsored by the European Commission for gender equality.

Funding scheme:
European Comission

Research collaboration sought:
As a staff member of Tel Hai Academic College in the Upper Gallilee and a research coordinator of this project I would like to cooperate with German research colleagues with the purpose of exchanging knowledge and ideas about investigation of a project like this and maybe creating a study collaboration

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Profile ID: KHE-IL-14

Title:
The Gap between the Real and the Ideal in Teachers' Training and in their Preparation to Absorb Pupils with Special Needs in the Education System

Description of research:
The goal of the study is to examine the teachers' training process and their preparation for absorbing pupils with special needs in the regular education system following the application of the Education Law in Israel, Europe and the USA.

At the present, most of the Western countries enjoy a plethora or programs for mainstreaming pupils with special needs in regular classes as part of the humanitarian containment approach, which stands for providing equal opportunities to pupils with special needs to study and grow in a normative society that is similar to the one they will have to deal with as adults. Vis-à-vis this law, large gaps were found in teachers' training and in their actual preparation to absorb pupils in the classroom.

The present study aims to examine the actual needs of practicing teachers for optimal absorption of these pupils into the education system and suggests settings and programs for teacher development in-service and pre-service as a lever for teacher empowerment and as a basis for developing an optimal absorption process for these pupils in the education system.

This subject is currently one of the most significant issues troubling the education systems in Western countries. Developing an appropriate instruction and guidance system will provide the right answers to the plights of practicing teachers and future teachers, who will enter the education system, on the one hand, and will provide adequate answers for optimal absorption of these pupils in the education system as a kind of preparation for living in a normative society.

Another aspect I would like to focus on in my study is that of gender – is there a difference in the containment ability of female vs. male teachers in coping with pupils with special needs in the classroom?

This aspect could provide answers to schoolmasters who place pupils in parent classes and help in the teachers' training process.

The study strives to shed new light on teachers' training in the post-modern era in terms of absorbing pupils with special needs in regular classes.

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Profile ID: KHE-IL-15

Title:
Musical Cultures of the Galilee: Social and Cultural Aspects of the Arab and Jewish Music of the Multi-cultural Population in the Galilee

Description of research:
Topics of the proposed studies
1) The liturgical music of the three religions in the Galilee: Judaism, Christianity and Islam.
2) The musical culture of children of the different ethnic and religious groups in the Galilee.
3) Music and minorities: political, sociological and cultural aspects of music in minority groups (in Israel and in Europe – a suggestion for cooperative study)

Methodology
The study will be based on a combination of two disciplines: ethnomusicology and ethnographical research:
1) Ethnomusicological methods that include recording the performance of the music, transcribing the recorded material, musical analysis of the transcriptions (modal material, musical structure, rhythmic structure, relationship of text to music, manner of performance).
2) Ethnographic methods that include regular observations and interviews with informants.

Research collaboration sought:
2 Chief Investigators – one in Israel and a partner in Europe.
4 research assistants – 2 in Israel and 2 in Europe
Equipment - computers and printers, recording devices, video cameras.

Subcontractors – management and secretarial support, video and sound studio, recording technicians,

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Profile ID: KHE-IL-16

Title: *Upgrading the academic skills of students as a means for advancing students in the higher education system / Developing and improving the efficiency of exploration and learning processes in the higher education system*

Description of research:

In a society that is characterized by a plethora of information, which is characterized by a rapid pace of renewal and high accessibility, and which is constantly growing and changing, the student's skills at handling new information, rather than just memorizing and accumulating it, are becoming increasingly important (Beyth-Marom et al., 1987).

The transference of learning from the classroom to new situations and/or contexts (for the learner) does not occur spontaneously. In most cases, deliberate teaching interventions are needed in order to increase the probability of such a transference occurring (e.g., Perkins & Salomon, 1998). At present, there are very few studies in higher education dealing with this transference.
Learning in the 21st century requires different skills and abilities from the students in order to keep in pace with the intense information revolution. These goals are drafted in the present study in the form of thinking and learning skills.

The goal of the study: To examine how the teaching of academic skills influences the improvement of the learning processes of the students at the Tel-Hai Academic College and their development as independent learners.

The present study is based on the examination of students' learning processes in order to examine their ability to choose the appropriate combination of information and skills and apply it in problem solving in different situations. According to Pasig's (2006) view, these will be probably the skills required from any person who wishes to function successfully in the 21st century

Thus, the design of the learning environment and the course assignments were applied according to the following principles:

- Providing necessary information
- Emphasizing the performance principles
- Repeated training in different situations
- Practicing in as real situations as possible
- Encouraging learning by doing
- Developing a reflective thinking style

Research Questions

1. The influence of the course of learning skills on the individual students' learning and exploration processes and their application in practice in their learning process at the College.
2. Transferring the skills and using them in other learning areas.
3. Redesign& planning the course of learning skills (teaching/learning plan) according to the study findings.

The Study Population: a group of 88-100 students in their second year at Tel-Hai Academic College.

Study Method
The study will be conducted as an action research in several stages. Each stage will examine the following parameters:

1. The contribution of the course on academic skills to the development of the learning and exploration skills of the students
2. The changes that are needed in the course planning according to findings.
3. Improving and upgrading teaching methods in the course according to findings.

The Study Hypotheses
Following the learning and experiencing processes, the students will be capable of:

- Transferring and using learning and exploration skills acquired in the course.
- Improving the skills to choose the appropriate combination of information and apply it.

The lecture will present the findings of the first stage of this action research as well as insights and changes that occurred in the course teaching plan.

Research collaboration sought:
The results of this research are expected to frame the plane of an academic course that will prepare the students for their academic life.

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Profile ID: KHE-IL-17

Title: *Phytoplasma yellow disease in grapevine*

Description of research:

We study the yellow disease in grapevines in several studies from different fields of interest using different approaches. Our studies began in 1999. They are funded by the Ministry of Agriculture, Ministry of Science, Israeli Wine Board and the Northern R&D. New proposals were recently submitted to these fund sources. The disease is caused by phytoplasma, an endo-cellular obligatory wall-less bacteria parasite. This parasite exists only in the phloem tissue of the host plant or in the digestive system, hemolimph and salivary glands of the vectors. The phytoplasma that cause yellow diseases in vines in Israel is of the Stolbur type. The vector in Israel is probably the planthopper Hyalesthes obsoletos. The insect vectors introduce the phytoplasma particles into the host plant tissues during feeding on it. The disease is spread all over Israel and cause heavy damages to the grapevine growers, especially growers of wine varieties. The epidemiology of the disease is very complicated due to the fact that it involves at least four different organisms: the pathogen, the insect vector, and various plant hosts. The pathogen cannot be grown artificially, the vector is very difficult to rear in cages, the pathogen spread and colonization in the grapevine plant is uneven and very slow and the shoot symptoms can disappear (visual recovery), though it is not clear weather the plant is totally recovered or not. Moreover, chemical treatments against the pathogen or the vector are ineffective. Our main interest is the plant Vitex agnus castus which was found as the preferred host for the insect vectors (Sharon et al, 2005). Surprisingly, all PCR tests to identify the pathogen particles in Vitex plants were so far negative and typical "yellows symptoms" were never observed. This plant is known for its cytotoxicity and apoptotic effect of its secondary metabolites on cells. In our studies we found that Vitex plants attract the planthoppers and can serve as a physical barrier to reduce the number of insects in the vineyards. Moreover, leaf extracts from Vitex plants attracted the planthoppers as well. This complexity raises many questions and hypotheses about the interactions between these factors, the mechanisms of inner immune systems in the plants and its causes and whether it is possible to develop a method to reduce the disease incidence in the vineyards. To address these questions we use several approaches: A. a study of the epidemiology of the disease in the vineyard in a perennial survey is carried on, where healthy, sick and recovered plants are monitored (using dGPS). B. the use of Vitex plant as a physical barrier in the vineyard. C. developing an experimental system in vitro to study plant – pathogen relation using a nurse culture. We are also interested in the immune mechanism in these plants and the pathogen annual and perennial movement within the plant tissues.

Research collaboration sought:

We would like to collaborate with German research groups on any of these subjects. We think it is interesting to compare the response to Vitex plant and its volatiles between the Israeli and German types of Hyalesthes obsoletos. It is also interesting to study the phenomenon of recovery in grapevines in the different habitats.

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STEINBEIS-EUROPA-ZENTRUM

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Profile ID: KHE-IL-18

Title: *The Good Teacher*

Description of research:
In our investigations about "the good teacher" our purpose was to find out what are the characteristics of the "ideal" teacher in the eyes of various Israeli populations. In a paper that was published in Teachers and Teaching we compared the perceptions of two sub-groups of students of education (students at an academic teacher's college and beginning teachers, who, while teaching, are completing their academic degrees) regarding two images of teachers: the ideal teacher and their own. In a new research - we investigated the similarities and differences in the perception of the good teacher among a wide population, focusing on two aspects- ethnicity and gender, as outlined by interviewees from four groups in Israeli society: Jewish men, Jewish women, Arab men, and Arab women. Data was collected by open questions in a telephone survey that was conducted among a representative sample of Israeli population.

Research collaboration sought: We hope to collaborate with German research colleagues in a comparative international research in this subject. We would like to discuss the possibility of cooperating in a research that will compare images of the good teacher in various national-cultural populations, using the same research tools and designs. In such a research we will try to find out the local cultural and specific characteristics of the good teacher vs. the global and general ones. As we know there are several Arab minorities in Germany, as in many other European countries, so that it may be interesting to investigate their images of the good teacher in comparison to the Israeli Arab citizens.

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Profile ID: KHE-IL-19

Title: *Migration from the cebter to the periphery*

Description of research:
By a survey research we investigated the phenomenon of inner immigration of Israeli citizens to the northern rural peripheral area of the Golan Heights region mostly from the central urban area and landscapes of the Tel Aviv metropolis region.

The research sought answers to many questions: Who are the immigrants that make such a change in their residence location, in their way of life and in their landscapes? What were their main reasons for making such a change? What attracted them to the new area and what significance did the landscape itself play in this decision? How did this change influence the environmental, socioeconomic, cultural and community aspects of their lives? What made them feel satisfied or dissatisfied with their new location? And what kind of attachment to their new landscape and community have they developed in the short period that they have been living there?

Results showed that the main reason for these unusual changes was the quest for "quality of life", a concept that combined living in nature, enjoying beautiful natural landscapes and fresh air, and having more meaningful lives for families in a caring community. These results were dealt in regard to the search for "life significance" not along the main road of modern urban life, but in the byways of the preferred peripheral rural landscapes.

The change from urban to rural landscapes and lifestyles is in contrast to the usual movement towards urbanization in the modern world. Investigating this phenomenon may help in developing peripheral areas that undergo processes of abandonment and decline.

Research collaboration sought:
I hope to collaborate with German research colleagues in a comparative research in this subject. In such a research we will try to find out local cultural and specific characteristics vs. global and general ones of migration from the urban centre to the rural periphery.

Migal – Galilee Technology

STEINBEIS-EUROPA-ZENTRUM

enterprise europe network

Profile ID: KHE-IL-20

Title: *Think Like a Zebra® - A unique method of enhancing creative and innovative thinking for business and everyday life*

Description of research:
One of the USP is: The visualization of the creativity process and the range of products. It's a user friendly method which turns creativity into something accessible.
We have developed:
An original method for developing creative thinking
A series of books Think Like a Zebra™
A kit of Cards - using the Animal coaches™
Workshops and seminars*
The first book, Think Like A Zebra®, was published in Israel by Am Oved Publishers (it is constantly in fifth place in the Israeli best seller lists, category: Business Books) and has been translated into English; the Italian publisher Mondadori will publish an Italian version in January 2009. Rights have also been sold to Brazil. A Chinese translation of the book was published in Taiwan (http://www.cite.com.tw/authors_search.php?authors_id=9452)
We have conducted workshops in business and private sectors: High-tech companies, educational institutions, private businesses, international conglomerates, mayors, politicians, managers, private individuals and more) and have seen businessmen create new products, improve cooperation in the office, and increase marketing channels. (www.thinklikeazebra.com)

THE ZEBRA WORKSHOPS
Enhancing creative and innovative thinking for business and everyday life using the Think Like a Zebra® method. Based on strategies borrowed from the animal world to direct creative thinking, the method is presented visually in a friendly and accessible manner.

The first book in the Think Like a Zebra® series, published by Am Oved, is now available. It has already been translated into English and Chinese, and an Italian translation is currently being prepared.

OBJECTIVES:
To introduce and provide practice in creative thinking tools that can be called on whenever ideas, brainstorming, or "thinking out of the box" are required.

AIMS:
- To expand each participant's personal capacity for creative thinking
- To enable regular use of easily applicable thinking tools to solve problems, produce ideas, develop initiatives, and determine strategies in all areas of life and business

ACTIVITIES:
- Hands-on practice in using the Think Like a Zebra® tools, including: Thinking GroundsTM, Animal CoachesTM, and Creativity CalculatorTM. The exercises offer the participants an opportunity to deal with real-life problems in a manner that is fun, effective, and unexpected.
- Identification of each participant's personal creative style.

Migal – Galilee Technology

STEINBEIS-EUROPA-ZENTRUM

enterprise europe network

Business Support at Your Doorstep

Research collaboration sought:
We would like to examine an increase of creativity in a certain population (better done in the industry field) after the use of the Zebra method. It could be interesting to compare different industries (such as high-tech vs. low tech industry). Maybe the insights of such a study could contribute to the development of these fields and others.

DEUTSCH-ISRAELISCHES
Jahr der Wissenschaft und Technologie 2008
שנת שיתוף הפעולה המדעי והטכנולוגי ישראל-גרמניה
2008

Federal Ministry of Education and Research

Israel Ministry of Science, Culture & Sport (MOST)

Migal – Galilee Technology

STEINBEIS-EUROPA-ZENTRUM

enterprise europe network

Business Support at Your Doorstep

Profile ID: KHE-IL-21

Title:

Description of research:

Funding scheme:

Research collaboration sought:

DEUTSCH-ISRAELISCHES Jahr der Wissenschaft und Technologie 2008

שנת שיתוף הפעולה המדעי והטכנולוגי ישראל-גרמניה 2008

Federal Ministry of Education and Research

Israel Ministry of Science, Culture & Sport (MOST)