

Sabanci University

**RESEARCH AND
GRADUATE POLICY
DIRECTORATE**

**SUPPORTS YOUR
RESEARCH AT SU**

in February 2010, features

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(IRP)**

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more information at: rgp.sabanciuniv.edu

The objective is to support research activities, which have the potential to contribute to inter-faculty collaborations and scholarly endeavours, are ambitious and interdisciplinary in nature, while being in line with SU mission, through resources of SU Internal Research Fund. Internally-funded Research projects are intended to provide SU access to prestigious international and national research networks and or commercial ventures, to emerging research platforms, opportunity to engage in scientific and applied research within areas of frontier research while developing qualified human resources.

Internally-funded Research Projects Evaluation Process and Criteria

Projects which fall under either one or more of the following categories are to be supported within IRP:

- Projects that demonstrate scientific, technological and or social merits while not having an opportunity for immediate external funding,
- Incubator stage research projects prior to entering the commercial phase
- Projects which integrate multiple disciplines and have high potential of strengthening social image.
- Projects which have the potential to contribute to practical learning stage in highly critical / developing research areas.

Evaluation Criteria: IRP projects entirely funded by SU are evaluated based on the following criteria by URC:

- Proposal conformance with SU research vision
- Projects which demonstrate involvement of a group of faculty members within or preferably across faculties
- Projects which are scientifically viable and potent, with outputs and potential of expansion clearly defined in the proposal.
- Interdisciplinary aspects of the project; having a plan for cross-faculty collaborations
- Coherence of project resources, time plan and objectives and having realistic objectives against the resource and time planning
- Construction of the proposal in a way to demonstrate planning based on work packages, their relationship with resources and project calendar, as well as embodiment of a project management structure
- Added value of the project and its clear explanation in the proposal (publications, further expansion into external projects and new research networks etc.)
- PI's proven track record of successful previous projects funded by SU -if any-and their acknowledgement by URC (Applicable after 2006)
- The potential of project outputs of developing new intellectual property or expanding the existing IP portfolio.

Evaluation process: Project evaluations are carried out in 2 phases.

- First phase evaluations; Submitted proposals are initially reviewed by URC and a preference list of projects to be evaluated in the second phase is drawn by URC. In order to ensure compatible selection in the second phase, project proposals are initially evaluated among the proposals within respective faculties and preference lists are drawn on a faculty basis as much as possible.
- In the second phase PIs present the candidate projects in a meeting with participation of URC members and the President. At the end of this phase URC constructs the final list of award recommendations for approval by the President.
- URC may request external review by specialists in a specific research area as deemed necessary.

Call for year 2010 Sabancı University Internally-funded Research Projects (IRP) will be open until **April 15th, 2010**. IRP projects are supported up to a maximum of 2 years.

For further information please visit below links:

<http://mysu.sabanciuniv.edu/yonerge/ALP/T-IRG-C470-04.html>
<http://mysu.sabanciuniv.edu/yonerge/ALP/E-PRG-C470-0401.html>

1.1. IRP Success Stories

<p>FENS Faculty Member Dr. Mustafa Ünel describes his Internally-Funded Research Project entitled "Integrated Visual Servoing and Force Approach to Micro/Nano Object Manipulation"</p>	<p>Mustafa_Ünel</p>
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picture

I came to know about SU Internal Grants by an e-mail from RGP. It was around March 2006. I had little experience in microsystems from a previous DPT funded project led by Prof. Dr. Asif Sabanovic. My students and I developed a computer vision system for monitoring the workspace under an optical microscope and extracting visual information from microscopic images. With that work, I realized that there were many interesting micromanipulation problems that could be tackled using a unified "vision, control and robotics" perspective. I thought that this call was an excellent opportunity for me to apply for an SU Internal Grant and get support to conduct further work in microsystems. At that time, I didn't have any publications in microsystems and therefore it might have been difficult to get financial support for my research from other funding agencies.

So, I submitted a proposal in April 2006. After a while, I was called on for a presentation to URC members. Our project was accepted and then funded starting in October 2006. I got two graduate students and some money for equipment and travel. Prof. Sabanovic was Co-PI and also provided some of the research facilities in his microsystems lab to be used by the team-members.

picture

picture

"Visual Servoing" is the closed-loop (feedback) control of robots using computer vision data. In our context, it may be called "Micro Visual Servoing" since we deal with micro-robots and micro-objects. Our project "Integrated Visual Servoing and Force Approach to Micro/Nano Object Manipulation" was realized through three work packages: Robust Feature Extraction Using Real-Time Image Processing Algorithms, Visual Servo Control Laws for Micro Manipulation and Force Estimation Using Image Data for Teleoperation Algorithms. In the second year of the project, I initiated a collaborative work with Dr. Devrim Gözüaçık from Biology program to discover the potential implementations of our findings in biological applications.

Dr. Gözüaçık provided biological data (cancer cells and zebrafish embryos) to be used in our experiments. Our algorithms were tested in several biological tasks. For example, automatic cell injection was successfully implemented by using visually guided micro probes. We were able to characterize properties of biological cells using novel estimation techniques from estimation and control theory.

picture

Project was completed with 3 MS Thesis, 1 Journal Publications, 2 Book Chapters and 5 Conference Papers. Two conference papers were presented in the top two robotics conferences (IEEE ICRA'09: International Conference on Robotics and Automation and IEEE IROS'07: International Conference on Intelligent Robots and Systems). Two of my students supported through this project were offered positions in academia and research centers. One of them was accepted to Catholic University of Leuven, Belgium with full PhD scholarship. The other one joined TUBITAK-MAM's Image Processing Group, and he is currently pursuing his PhD at SU under my supervision. A third student of mine, who did his MS thesis within the context of our project, was accepted with full PhD scholarship to Blaise Pascal University in France.

During the realization of this project we received enormous support from both RGP and PMO. I would like to thank them all for their continuous and generous support which enabled us to successfully and productively finish our project.

Selim_Balcisoy

FENS Faculty Member Dr. Selim Balcisoy describes his Internally-Funded Research Project entitled "Novel Representation and Interaction Techniques of Complex Datasets"

Complex data such as communication, daily news, personal records (images, files), and scientific experiments is growing with the advent of cheap and fast computing and storing. Users from diverse backgrounds and education levels are experiencing a continuous flow of overwhelming data. Thus there is a need to seamless interaction with this new phenomenon of overwhelming data. However current interaction and representation techniques are failing to provide satisfying user experiences or proposing only incremental improvements. A prime example is the 2D Desktop metaphor with windows, menu and mouse used since early 1980's.

In this project addressed and solved issues related to navigation, interaction, perception and consciousness deriving from the management of complex data sets, utilizing artistic/design production practices in virtual reality/environments. To do so this project gathered a team of designers, artists and computer scientist in a trans-disciplinary framework. We think only such a team can propose scientifically and commercial successful radically different data representation and interaction methods. The project team consists of Elif Ayiter, Murat Germen, both Faculty from FASS and Selim Balcisoy, from FENS.

In the ordinary flow of day to day activities the self descriptive, self-reflexive, and recursive processes of data collection reveal themselves. These pairs are not encountered as binary oppositions in conflict, but in a continual management of data transformation. We converge with our own solutions-and the development of technological tools-and give birth to new scientific tools as well as intuitively artistically generated tools, literally and figuratively.

The application process was fast relative to other funding schemas. We were able to get important input on the project from the evaluation panel. The main output of the project is a continuation project supported by TUBITAK 1001. We have also submitted two papers to international journals and conceded three masters thesis with the funding provided by the project. In general this project enabled us to start a research direction on Information Visualization.

Serhat_Yesilyurt

FENS Faculty Member Dr. Serhat Yesilyurt describes his Internally-Funded Research Project entitled "Design and Demonstration of The Traveling-wave Actuator for Viscous Propulsion of Micro-swimmers"

It is one of the holy grails of modern medicine that one day micro swimming robots will be used to diagnose diseases and perform today's dangerous surgical tasks effortlessly. Long ago science fiction community outlined the tremendous potentials of this technology. Recent developments in micro manufacturing technologies and materials research improved the realizability of that dream leading to increased focus on the subject within the last decade.

We were interested in propulsion mechanisms of micro swimming organisms about 5 years ago. Following the completion of a Master's Thesis on the modeling and simulations of the propulsion mechanisms of micro swimming robots, by Mr. Ahmet F. Tabak, we decided to pursue the work with a wider perspective that focused on the modeling, validation, materials, development and electronic control of macro scale swimmers in viscous environment that mimics the motion of micro swimmers in water. Jointly with other faculty members in FENS, Melih Papila and Ayhan Bozkurt, we applied for internal research grant to fund this project to explore and employ our capabilities within the Sabanci University.

The two-year project consisted of four work packages: modeling and simulations; materials development; design and development of electronic control circuits; and demonstration. All workpackages are completed successfully within the scope outlined in the proposal. In the first workpackage, two and three dimensional time-dependent finite-element simulations of the traveling-plane wave deformations on elastic sheets and rods are successfully

completed; effects of the parameters such as amplitude, driving frequency, wavelength on the thrust force and the swimming velocity of are determined; work is extended to modeling and simulations of the rotating rigid helical flagella. In the second workpackage lead by Dr. Papila characterization of actuation materials such as piezoelectric polymer and ceramics, piezoelectric macro fiber composites (MFC) and ionic polymer metal composites (IPMC) is completed. The third workpackage is lead by Dr. Bozkurt, 6 channel drive circuit is designed and built. In the last workpackage, the traveling-plane wave mechanism did not perform very well; however the mechanism that uses the rotation of a rigid helical flagellum is successfully demonstrated. Overall the outputs of the project are: 5 publications in SCI-indexed journals; 8 publications in refereed conference proceedings; 5 MS thesis; 2 ENS 491-492 projects.

Currently, we are working on the realization of a micro swimming robot, which can be used for micro (cell) manipulation tasks as an immediate goal, and the development of reduced-order models to be used for navigation and control. Funding is sought from national and international sources, with special emphasis on larger scale collaboration including international partners.

2. Open Call for Proposals

EU 7TH FRAMEWORK - TUBITAK - SANTEZ - COST - ESF

Sponsored Institution	Call Title	Deadline for Submission	Theme
EU 7th Framework Program (FP7) Cooperation Specific Program			
EU FP7-Cooperation	FP7-ENERGY-2010-2	March 04, 2010	Energy
EU FP7-Cooperation	FP7-ICT-2009-6	April 13, 2010	ICT
EU FP7-Cooperation	FP7-ICT-2009-C	July 06, 2010	ICT
EU FP7 Ideas Specific Program			
EU FP7-Ideas	ERC-2010-AdG_20100224	February 24, 2010	Advanced Grant-Physical Science&Engineering
EU FP7-Ideas	ERC-2010-AdG_20100317	March 17, 2010	Advanced Grant-Life Sciences
EU FP7-Ideas	ERC-2010-AdG_20100407	April 07, 2010	Advanced Grant-Social Sciences and Humanities
EU FP7 People Specific Program			
EU FP7-People	FP7-PEOPLE-2010-COFUND	February 18, 2010	People
EU FP7-People	FP7-PEOPLE-2010-RG	March 09, 2010 September 07,2010	People
EU FP7-People	FP7-PEOPLE-2010-IRSES	March 25, 2010	People
EU FP7 Capacities Specific Program			
EU FP7-Capacities	FP7-SCIENCE-IN-SOCIETY-2010-NCP	April 29, 2010	Science in Society
TUBITAK			
TUBITAK	Support Program for Scientific and Technological Research Projects (1001)	March 05, 2010	-
TUBITAK	EVRENA- Global Researcher Program (1010)	March 05, 2010	-
TUBITAK	UBAP-The Participation Program for International Scientific Research Projects (1011)	March 12, 2010	-

TUBITAK	Support Program for Research Projects of Public Institutions(1007)	July 02, 2010	-
TUBITAK	Career Development Program (3501)	September 03, 2010	-
TUBITAK	Visiting Scientists Fellowship Program (2221)	End of every month	-
TUBITAK	Support Program for the Initiative to Build Scientific and Technological Cooperation Networks and Platforms (1301)	Open	-
TUBITAK	Patent Application Promotion and Support Program (1008)	Open	-
TUBITAK	Short-Term R&D Funding Program (1002)	Open	-
SAN-TEZ			
Ministry of Trade and Industry	2010 Industry Thesis (SAN-TEZ) Program	March 15, 2010	-
COST			
EU RTD Framework Program	European Cooperation in the field of Scientific and Technical Research	March 26, 2010	-
European Science Foundation (ESF)			
ESF	Ecology of Plant Volatiles, from Molecules to the Globe (EuroVOL)	March 26, 2010 (Outline Proposal)	-
ESF	Molecular Science for a Conceptual Transition from Fossil to Solar Fuels (EuroSolarFuels)	March 26, 2010 (Outline Proposal)	-
ESF	Bio-inspired Engineering of Sensors, Actuators & Systems (EuroBioSAS)	March 29, 2010 (Outline Proposal)	-
ESF	Graphs in Geometry and Algorithms (EuroGIGA)	March 29, 2010 (Outline Proposal)	-
ESF	Functional genomic variation in the epilepsies (EuroEPINOMICS)	March 30, 2010 (Outline Proposal)	-
ESF	Understanding and Misunderstanding: Cognition, Communication and Culture (EuroUnderstanding)	April 08, 2010 (Outline Proposal)	-

Abbreviations:

ICT: Information and Communication Technologies

3. RGP News

Proposals submitted by RGP

The RGP Directorate has processed 8 proposals for the following sponsoring agencies in January and February 2010.

- 1 proposal for TUBITAK Short-Term R&D Funding Program (1002).
- 1 proposal for TUBITAK Support Program for Research Projects of Public Institutions (1007).
- 1 proposal for TUBITAK Bilateral Cooperation- Korea Research Foundation (2523).
- 3 proposals for EU FP7 Cooperation Specific Program Information and Communication Technologies (ICT).
- 1 proposal for EU FP7 Cooperation Specific Program Socio-economic Sciences and the Humanities (SSH).
- 1 proposal for Ad Personam Jean Monnet Chair Program.

Attended Meetings and Events of the RGP Directorate in January and February 2010

- Dr. Cemil Arıkan made a presentation at Executive MBA class at Bilkent University on Innovation and Technology Transfer, January 09, 2010
- Dr. Cemil Arıkan attended the ACA conference "What is new in Brussels?" in Brussels, January 22, 2010
- Dr. Cemil Arıkan attended the "LES AIA Conference and Matchmaking Event" at Ceylan Intercontinental, January 28, 2010

4. Latest Research News

Sabancı University Faculty has been awarded with three new grants from EU FP7 Marie Curie International Reintegration Grants

Dr. Özge Kemahlioğlu, Faculty Member at the Faculty of Arts and Social Sciences, has been awarded with Marie Curie International Reintegration Grant for her project entitled "Partisan Ties that Matter? Exploring the Advantages of National Incumbency for Local Governments".

Dr. Selçuk Özyurt, Faculty Member at the Faculty of Arts and Social Sciences, has been awarded with Marie Curie International Reintegration Grant for his project entitled "Reputation and Market Microstructure".

Dr. Şerif Aziz Şimşir, Faculty Member at the Faculty of Management, has been awarded with Marie Curie International Reintegration Grant for his project entitled "Microstructure of Takeover Markets".

Sabancı University Faculty has been awarded with a new grant from TUBITAK German-Turkish Research and Development Projects Involving Science and Industry (2+2 Projects)

Dr. Aytül Erçil, Faculty Member at the Faculty of Engineering and Natural Sciences, has been awarded with TUBITAK German-Turkish Research and Development Projects Involving Science and Industry for her project entitled "Automated Visual monitoring for Improving Patient SAFETy".

5. Upcoming Events

- "ICT for Energy Efficiency", February 23-24, 2010, Brussels, Belgium.
- "Conference on Privacy Law, Technology Policy and The Internet", February 25-26, 2010, Hyderabad, India.
- "Workshop Series on Gender Aspects in Research, Multiple Locations: Environment and Food, Agriculture and Biotechnology", February 26, 2010, Brussels, Belgium.
- "Future Match 2010", March 2-6, 2010, Hannover, Germany.
- "Hybrid Materials Workshop", March 03, 2010, Luxembourg.
- "Conference on Policy, Growth, Corporate Research and Development", March 3-4, 2010, Seville, Spain.
- "World Sustainable Energy Days 2010", March 3-5, 2010, Wels, Austria.
- "Innovation Workshop on Novel Food Packaging", March 04, 2010, Brno, Czech Republic.
- "Successful R&D in Europe", March 04, 2010, Düsseldorf, Germany.
- "Conference on Perceptions of Citizen Security", March 4-5, 2010, Garmisch-Partenkirchen, Germany.
- "Personalized Technology Conference", March 09, 2010, London, UK.
- "Week of Innovative Regions in Europe", March 15-17, 2010, Granada, Spain.
- "World Renewable Energy Technology Congress & Expo-2010", March 18-20, New Delhi, India.
- "European Conference on Nanofilms 2010", March 22, 2010, Liège - Belgium.
- "The EU Sustainable Energy Week", March 22-26, 2010, Brussels, Belgium.
- "ManagEnergy Annual Conference for Local Energy Actors in Europe", March 22-26, 2010, Brussels, Belgium.
- "Conference and Exhibition on Integration Issues of Miniaturized Systems: MEMS (Micro-Electro-Mechanical Systems), MOEMS (Micro-Opto-Electromechanical Systems), ICs (Integrated Circuits) and Electronic Components", March 23-24, 2010, Como, Italy.
- "Workshop Series on Gender Aspects in Research, Multiple Locations: Socio-Economic Sciences and Humanities/Health", March 26, 2010, Brussels, Belgium.
- "4th Conference on Biocatalysis in The Food and Drink Industries", April 11-14, 2010, Toulouse, France.
- "SPIE Photonics Europe", April 12-16, 2010, Brussels, Belgium.
- "Principles and Development of Bio-Inspired Materials", April 13-15, 2010, Vienna, Austria.
- "Med-e-Tel, The International eHealth, Telemedicine and Health ICT Forum for Education, Networking and Business", April 14-16, 2010, Luxembourg.

- "I-SUP2010 - 2nd International Conference on Innovation for Sustainable Production 2010", April 18-21, 2010, Bruges, Belgium.
- "European Energy Conference", April 20-23, 2010, Barcelona, Spain.
- "European Wind Energy Conference-EWEC2010", April 20-23, 2010, Warsaw, Poland.
- "8th Eastern European eGov Days: Changing Concepts & eGovernment as a Service, April 21-23, 2010, Prague, Czech Republic.
- "Sustainable Production of Transportation Fuels and Chemicals: Challenges and Opportunities", April 26-28, 2010, Oostende, Belgium.
- "European Biomass Conference and Exhibition", May 3-7, 2010, Lyon, France.
- "4th International Information Security&Cryptology Conference", May 6-7, 2010, Ankara, Turkey.
- "18th International Symposium: Transport and Air Pollution", May 18-19, 2010, Dübendorf, Switzerland.
- "GREEN WEEK 2010 on Biodiversity", June 1-4, 2010, Brussels, Belgium.
- "1st International Conference and Exhibition - SAVE Energy, SAVE Water, SAVE the Planet", June 3-5, 2010, Sofia, Bulgaria.
- "Transport Research Arena-TRA Conference", June 07-10, 2010, Brussels, Belgium.
- "12th International Symposium of Materials, Methods & Technologies (MMT)", June 11-15, 2010, Sunny Beach, Bulgaria.
- "Nanoforum", June 16-17, 2010, Torino, Italy.
- "Marine Biotechnology: Future Challenges", June 20-25, 2010, Acquafredda di Maratea, Italy.
- "HealthGrid 2010 Conference", June 28-30, 2010, Paris, France.
- "4th World Congress of Environmental and Resource Economists", June 28-July 02, 2010, Montreal, Canada.
- "BWEA Offshore Wind 2010", June 29-30, 2010, Liverpool, UK.
- "4th International Convention for Rehabilitation Engineering and Assistive Technology/I-CREATE", July 21, 2010, Shanghai, China.
- "3rd Annual World Congress of Industrial Biotechnology 2010", July 25, 2010, Qingdao, China.
- "9th International Symposium of ECONOMY & BUSINESS-Economic Development and Growth", September 2-6, 2010, Sunny Beach, Bulgaria.
- "4th International Research Conference LANGUAGE, INDIVIDUAL AND SOCIETY IN THE MODERN WORLD", September 6-10, 2010, Sunny Beach Resort, Bulgaria.
- "Manufuture-NMP 2010", September 07, 2010, Brussels, Belgium.
- "International Research Conference EDUCATION, RESEARCH & DEVELOPMENT (ERD)", September 9-13, 2010, Sunny Beach Resort, Bulgaria.
- "15th International Union of Air Pollution Prevention and Environmental Protection Associations", September 12-16, 2010, Vancouver, Canada.
- "15th Annual Meeting of the European Council for Cardiovascular Research (ECCR)", October 08, 2010, Grasse, France.
- "Recombinant Pharmaceutical Manufacturing From Plants - The Future of Molecular Farming", October 15, 2010, Hertfordshire, UK.
- "eChallenges e-2010 Conference", October 27-29, 2010, Warsaw, Poland.

6. Call Forecast

Call Theme	Call Opens	Call Deadline
People- IEF (Intra-European Fellowships)	March 17, 2010	August 17, 2010
People- IIF (International Incoming Fellowships)	March 17, 2010	August 17, 2010
People- IOF (International Outgoing Fellowship)	March 17, 2010	August 17, 2010

10. Editorial

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