University of Michigan
College of Engineering

Dr. Anatole S. and Pamela D. Dekaban Fund

Annual Report
July 1, 2011 – June 30, 2012

Prepared by
Professor Radoslaw L. Michalowski
Dekaban Program Coordinator

August 2012

Inner Courtyard of the Main Building
Warsaw University of Technology
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Executive Summary

The Dekaban Fund was initiated with the gift of Dr. Anatole S. and Mrs. Pamela D. Dekaban in 1993. The purpose of the Dekaban Program is to encourage the exchange of technical knowledge between advanced academic professionals in various fields of engineering at the Warsaw University of Technology (WUT) in Poland, and at the University of Michigan (U-M) College of Engineering (CoE) in Ann Arbor, Michigan.

The College of Engineering hosted the 26th Dekaban Fellow this year, fulfilling its primary mission of sponsorship of long-term visits of young faculty members from WUT to the University of Michigan. A senior Dekaban Fellow from Warsaw also visited the Ann Arbor campus, as part of an ongoing collaboration. With the new leadership elected at the Warsaw University of Technology, some changes are expected in the Dekaban Program Committee in Warsaw. The fund remains fiscally healthy and the program is ready to receive new exchange visitors. Updated information about the program is available at the Dekaban Fund web site (http://dekaban.engin.umich.edu/).
2011-2012 Activities

Dekaban Fellowships

The principal activity of the Dekaban Program is the exchange of junior faculty members between Warsaw University of Technology and the College of Engineering at the University of Michigan. The majority of former Dekaban Fellows have been recruited from the rank of assistant professors at WUT. The coordinator of the program at Michigan makes every effort to match the interests of the potential fellows with those of the faculty at Michigan, and the visitors come with a well-prepared program of study and research. The 2011-12 Dekaban Fellow, Dr. Robert Mroczynski, came from the Department of Electronics at WUT. Before arriving in Ann Arbor, he was met in Warsaw in August 2011 by the coordinator of the program, Professor R. Michalowski, during his routine yearly visit to the Warsaw University of Technology. Dr. Mroczynski was the 26th Dekaban Fellow since the inception of the Program in 1993.

Dr. Robert Mroczynski

Dr. Robert Mroczynski joined the College of Engineering as a Dekaban Fellow and visiting research scholar in October 2011 for a six-month appointment with the Department of Electrical Engineering and Computer Science (EECS).

Dr. Mroczynski is an assistant professor at WUT in the Faculty of Electronics and Information Technology. His work is centered on the technology and characterization of semiconductor devices, such as integrated circuits. These circuits are found in many of the electronic gadgets relied on in daily living, such as computers and mobile telephones. A fundamental part of every semiconductor device is a transistor; Dr. Mroczynski’s area of specialization is to fabricate transistors and improve their electrophysical properties. His ultimate objective is to make the devices smaller, faster and more efficient.

During his Dekaban Fellowship, Dr. Mroczynski worked closely with EECS Professor Jerzy Kanicki and his team. At U-M, he focused his research on display devices. To improve display quality requires
creating better transistors, called thin film transistors (TFTs). With the team, Dr. Mroczynski researched new materials for fabricating TFTs. One such material – indium gallium zinc oxide (IGZO) – was recently selected as a new material for TFT applications, but was not yet commercially available. At U-M, however, he was able to focus his efforts on the characterization and fabrication of transistors with IGZO. He constructed numerous test structures and was able to successfully fabricate one that works.

As a Dekaban Fellow, he appreciated the opportunity to learn how to work with the very sensitive IGZO material during the technology steps, and to learning what is important from a research perspective. His work at the CoE helped him more specifically identify a topic for further study in Poland, where he now will be able to guide a team of researchers. He especially enjoyed collaborating with others at the College, sharing his expertise and learning from others in the field.

Dr. Mroczynski returned to Poland in April 2012 to continue his research and prepare with his wife for the birth of their first child.
In addition to junior fellowships, the Dekaban Program facilitates visits of Senior Fellows to the University of Michigan, as well as visits of the U-M faculty to Warsaw University of Technology. These are typically from a few days to two weeks. This year, Professor Piotr Wolanski from the Faculty of Power and Aeronautical Engineering at the Warsaw University of Technology visited the Department of Aerospace Engineering from May 22-25, 2012. Prior to visiting Ann Arbor, Prof. Wolanski attended an aerospace conference in Columbus, Ohio.

Professor Piotr Wolanski continues his contacts with the Department of Aerospace Engineering where he spent his sabbatical in the early stages of his career, in the 1970s. While in Ann Arbor, he presented a seminar in the department, entitled “Experimental Research and Numerical Calculations of Rotating Detonation.” Prof. Wolanski introduced the topic by discussing the advantages of the application of detonation combustion to jet propulsion, and followed with the description of research carried out at the Institute of Aviation and the Warsaw University of Technology. He focused on the evaluation of the conditions at which rotating detonation is propagating in cylindrical channels for different fuel-air mixtures. Hydrogen-air as well as acetylene-air mixtures have been successfully tested. In addition, he discussed 3-D numerical simulations of mixture formation. The seminar was well attended by the faculty and was followed by an interesting discussion.
Other Activities

In June 2011, the Associate Executive Director in the CoE Office of Advancement, Ms. Lin R. Cargo, and the Coordinator of the Dekaban Program at the University of Michigan, Prof. Radoslaw Michalowski, met with Dr. Gregory Dekaban in London, Ontario (referenced in 2010-11 report). The discussion at that meeting related primarily to the state of the Dekaban Fund at the University of Michigan, as well as two other Dekaban funds: one in Vancouver, British Columbia, Canada and one in Glasgow, Scotland. An action item from this meeting was to hold a meeting between the coordinator of the Dekaban Fund at U-M and the chair of the Dekaban Fund Advisory Council and Program Committee, Dr. Thaddeus C. Radzilowski, to convey some of the outcomes of the discussion with Dr. Dekaban. This meeting took place on July 22, 2011 in Hamtramck, Michigan.

Dr. Radzilowski is the president of Piast Institute, an organization and research center focusing on Polish and Polish American affairs. It is also one of 56 United States Census Information Centers of the Census Bureau (the only such center with a special focus on a major European ethnic group). With its staff, boards, and international network of fellows, Piast Institute develops conferences, seminars, publications, public programs, and lectures related to Polish and Polish American affairs.

The discussion during the meeting revolved around how to make the three Dekaban programs more responsive to current needs in the global environment.
**Plans for 2012-2013**

Elections of the new leadership at the Warsaw University of Technology were held in Spring 2012. The new administration will be installed in October. Professor Jan Szmidt was elected the new President (Rector); Prof. Szmidt is a faculty member in the Department of Electronics and Information Technology and was the advisor of the 2011-12 Dekaban Fellow. Professor Rajmund Bacewicz was elected the Vice-President for Research, and, as of October 1, 2012, will take over the leadership on the Dekaban Program Committee at the Warsaw University of Technology. The Dekaban Fund coordinator, Prof. Radoslaw Michalowski, will be meeting with Prof. Bacewicz in early August to talk about the plans for the future of the Dekaban Program at WUT.
Appendices

Appendix A

Dekaban Fund Advisory Council and Program Committee

Dekaban Fund Advisory Council
Dr. Anna Bielinska
Research Assistant Professor
University of Michigan School of Medicine
1652 Golden Lane
Ypsilanti, MI 48198
(734) 487-8623

Mr. Joe Bransky
3816 Autumn Drive
Huron, OH 44839

Dr. Karen Majewski
Executive Director, Polish American Historical Association
The Orchard Lake Schools
3535 Indian Trail
Orchard Lake, MI 48324
(248) 683-1743

Mr. Richard Prusinski
1726 S. Hill Boulevard
Bloomfield Hills, MI 48304

Dr. Thaddeus C. Radzilowski, Chair
President, PIAST Institute
2926 Caniff Ave
Hamtramck, MI 48212
(313) 664-0321
(313) 664-0326 (fax)
Dekaban Program Committee at the Warsaw University of Technology:

Professor Tadeusz Kulik, chair, *ex-officio*
Professor Maciej Jarosz
Professor Jerzy Kozak
Professor Wojciech Radomski
Professor Włodyslaw Włosiński
Professor Piotr Wolański

Dekaban Program Coordinator at the University of Michigan College of Engineering:

Professor Radoslaw L. Michalowski
Appendix B

Dekaban Fellow Profile

Name: Robert Mroczynski
2011-2012 Dekaban Fellow

Institution: University of Michigan, College of Engineering
Department of Electrical Engineering and Computer Science

Title: Visiting Assistant Research Scientist

Address: 1301 Beal Avenue
Ann Arbor, MI 48109-2122

E-Mail: rmroczyn@elka.pw.edu.pl

Education: 2008 – PhD, Warsaw University of Technology
2003 – MS, Warsaw University of Technology

Research Interests: Technology of advanced semiconductor devices, plasma processes, ultra-thin dielectric layers fabrication, MEMS, displays

Dekaban Fund Activity: Dekaban Fellow, October, 2011-April, 2012; carried out research on indium-gallium-zinc-oxide (IGZO) for fabricating Thin-Film Transistors (TFTs) for application in liquid crystal displays (LCDs); performed optimization of gate dielectric layer fabrication; focused on electrical characterization of test structures obtained with high-$k$ dielectric layers; while at U-M, collaborated closely and worked under the supervision of Prof. Jerzy Kanicki of the Department of Electrical Engineering and Computer Science.
Appendix C

Visitor Profiles

Name: Piotr Wolański
Member and former chairman of the WUT Dekaban Committee

Institution: Faculty of Power and Aeronautical Engineering
Head of Division of Aircraft's Engines
Warsaw University of Technology

Title: Professor (since 1989)

Address: Nowowiejska St. 21/25
00-665 Warsaw, Poland

Phone: (+48-22) 234-5290

Fax: (+48-22) 825-0565

E-Mail: wolanski@itc.pw.edu.pl

Education: 1979 – DSc Warsaw University of Technology
1971 – PhD Warsaw University of Technology
1966 – MSc Warsaw University of Technology

Research Interests: Astronautics, aerospace engineering, internal combustion engines, explosions

Dekaban Fund Activity: Visited University of Michigan in May 2012 and presented a seminar in the Department of Aerospace Engineering; member of the Dekaban Committee at the Warsaw University of Technology since inception (chair, 2002-2005)
Appendix D

Dekaban Fund Endowment Agreement

The Dr. Anatole S. and Pamela D. Dekaban Fund

Establishment of the Fund

Anatole S. and Pamela D. Dekaban ("donors") hereby pledge and promise to give an initial gift of $100,000 to the Regents of the University of Michigan to establish an endowment fund for the benefit of the College of Engineering. It is the intent of the donors to make additional gifts to increase the principal amount of the fund to $500,000, including a gift of real property acceptable to the University's Board of Regents. The Fund is to be named for the donors, the Dr. Anatole S. and Pamela D. Dekaban Fund. Further, it is the intent of the donors that the Regents accept future gifts to enhance this fund.

Purpose of the Dekaban Fund

It is the wish and goal of the donors to encourage the exchange of technical knowledge between advanced academic professionals in various fields of engineering at the Warsaw University of Technology and the University of Michigan. To help provide support for such an exchange, the wish of the donors is that the annual distributions from the Fund, in accordance with the University of Michigan's endowment distribution policy, be made available at the direction of the Dean of the College of Engineering to be applied for such exchanges of faculty, as provided herein.

Exchange Program

At the discretion and control of the College of Engineering, said annual distributions from the Dekaban Fund may be used for exchanges of any of the following ranks of faculty, namely:

(a) Two junior faculty from Warsaw University of Technology (with adequate English) to the University of Michigan College of Engineering annually, but not concurrently, for four to five months each person;

(b) One or two senior faculty from Warsaw University of Technology to College of Engineering annually for two weeks;

(c) Two senior faculty from College of Engineering to Warsaw University of Technology annually, and concurrently or individually, each year for three weeks each;

(d) One senior College of Engineering faculty to Warsaw University of Technology for a sabbatical term with the College striving to use its best effort to achieve three such faculty sabbatical terms in the consecutive five years following the full funding of the Dekaban Fund at the level of $500,000 for the endowment principal sum.
Depending on the level of annual distribution, the number of visitors as described in (a), (b) or (c) above can be appropriately increased. If by the end of any fiscal year, not all available monies have been disbursed, then 50% of the remaining sum should be added to the principal of the fund and 50% prorated to the next fiscal year.

If in the future, the Dean of the College of Engineering and the Prorector of Warsaw University of Technology jointly determine that different numbers and categories of exchanges other than those listed under (a), (b), (c) and (d) would be more appropriate, such a change can be made through Addendum to the Agreement and by asking the donors or their designee for endorsement.

Implementation and Administration

The Dean of the College of Engineering hereby agrees to appoint a faculty committee to administer the application of the distributions for the purposes described herein; and, in consultation with Warsaw University of Technology Committee Chairman (ex-officio Prorector), to review applicants, nominees, and candidates for exchange; and recommend same for selection at the sole discretion and determination of the Dean of the College, consistent with the University of Michigan policies, practices, and procedures for selection and appointment of faculty.

Moreover, at the discretion of the Dean of the College of Engineering, University of Michigan faculty visiting the Warsaw University may be allocated a portion of the Dekaban Fund's annual distributions to make available to those attending lectures, seminars, and other presentations by University of Michigan faculty, books, periodicals and other information technology relevant to said presentations but not exceeding 5% of the annual distribution.

The Associate Dean for Graduate Studies and Research for the College, in charge of the international programs of the College, will be an ex officio member of the committee and be responsible for providing donors or their designated heirs and their Advisory Council (to be established by the donors) with an annual report of program activities and a brief financial statement. The donors or their designee will acknowledge in writing the receipt of the financial report.

Inauguration of Fund

Donors intend to give an additional $20,000 that will be fully expendable at the discretion of the Dean of the College of Engineering, and not intended to enlarge the principal of the Dekaban Endowment Fund, to enable the College of Engineering to inaugurate exchanges, if administratively feasible, beginning in the academic year, 1993-94. In such event, the Dean or his delegate of senior rank will travel to Warsaw University of Technology to inaugurate the program.
University of Michigan Regents Gifts Policy

It is understood by the Donors undersigned that in accordance with Regents' Bylaws Section 3.05, all gifts are accepted by the University subject to the general policy of the Board that the wishes of donors with respect to their gifts, shall be loyally observed so long as, in the opinion of the Board, such wishes do not conflict with the proper administration of the University under changes that may develop in the course of time.

Governing Law and Venue

It is further understood that any disputes relating to the construction, interpretation, or enforcement of this agreement shall be governed by the law of the State of Michigan and shall be heard, decided, and resolved in Michigan.

IN WITNESS WHEREOF, the donors and the University by its duly authorized officer, have caused this agreement to be executed on or as of the __ day of ___________ 1993.

/s/ Anatole S. Dekaban,  
M.D., Ph.D.

/s/ Pamela D. Dekaban

THE COLLEGE OF ENGINEERING           THE REGENTS OF THE UNIVERSITY  
of Michigan

By ___________  
Peter M. Banks,  
Its Dean

By ___________  
Gilbert R. Whitaker,  
Its Provost and Vice President for Academic Affairs