University of Michigan
College of Engineering

Dr. Anatole S. and Pamela D. Dekaban Fund

2008-09 Annual Report
(July 1, 2008 – June 30, 2009)

Prepared by
Professor Radosław L. Michalowski
Dekaban Program Coordinator

December 2009

Warsaw University of Technology
Stair Cases in the Main Building
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Executive Summary

The Dekaban Fund was created in 1993 with the gift of Dr. Anatole S. and Mrs. Pamela D. Dekaban. 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 Warsaw, Poland, and at the University of Michigan (U-M) College of Engineering (CoE) in Ann Arbor, Michigan.

The primary activities of the program are sponsored fellowships which enable junior faculty from WUT to come to the University of Michigan to collaborate with U-M faculty, gain experience in their respective fields, and promote future joint research efforts. Two Dekaban Fellows visited U-M during fiscal year 2009 (July 1, 2008 - June 30, 2009) and arrangements were made for new fellows to join U-M during FY10. FY09 marked the sixteenth year of the program’s existence and, thus far, twenty-four fellows have visited various departments at the U-M College of Engineering.

Despite the significant economic downturn in FY09, the fund is fiscally healthy, and the activities planned for FY10 include long-term visits of at least two fellows from WUT.
2008–2009 Activities

Administrative Activity

Dekaban Program Committee
The meeting of the Dekaban Program Committee at the Warsaw University of Technology took place on February 27, 2009. The Committee discussed the program of activities for the coming year with University of Michigan program coordinator, Professor Radoslaw Michalowski. Short visits by senior faculty members and longer visits of junior faculty members were discussed. The Committee selected two junior-level candidates for Dekaban Fellowships: Dr. Pawel Oleszczak of Aerospace Engineering and Dr. Apoloniaz Kodura of Environmental Engineering.

![Meeting of the WUT Dekaban Program Committee on February 27, 2009](image)
Left to right: Professor R. Michalowski, Professor Wladyslaw Wlosinski, Professor Piotr Wolanski, and Professor Tadeusz Kulik

The program of computer donations for the Warsaw University of Technology was discussed, with the conclusion that it will be stopped as WUT can fulfill their needs without assistance.
**Dekaban Fellowships**

Dekaban fellowships are of primary importance to the Dekaban Program. Prospective fellows are recruited from the rank of assistant professors at WUT. Young faculty from all departments are eligible, provided their area of research has its counterpart in one of the departments at the University of Michigan.

Two Dekaban Fellows visited the U-M College of Engineering during academic year 2008-09. The Dekaban Program hosted Dr. Apolioniusz Kodura, who arrived in Ann Arbor in winter 2008 and stayed through August of that year, with research collaboration at the Department of Naval Architecture and Marine Engineering (NAME).

As Dr. Kodura joined the College in FY08, a more extensive report about his visit was included in last year’s report. In Warsaw, Dr. Kodura is a faculty member in the Environmental Engineering Department. While at U-M, his research focused on hydraulic engineering with the Department of Naval Architecture and Marine Engineering; he collaborated closely with Prof. Guy Meadows. His research had an environmental flavor to it; he explored the effects of using cavitation to eliminate the problem microorganisms that may be transported in ballast water into foreign ecosystems. He visited for six months and plans were made for his return for another six months in 2009-10.

Dr. Pawel Olszewski was the second Dekaban Fellow during academic year 2008/09. Details of his work in the first portion of his tenure as a Dekaban Fellow were highlighted in the FY08 report. In the second part of his long-term visit to Michigan, Dr. Olszewski collaborated with Professor Arvind Atreya of the Department of Mechanical Engineering. This collaboration consisted of two components.

The first component of his work related to a program sponsored by the U.S. Department of Energy, and carried out by the Industrial Assessment Centre (IAC). Dr. Olszewski participated in nine energy audits in manufacturing plants in Michigan, Indiana and Ohio, with the goal of identifying potential savings from energy efficiency improvements, waste minimization, pollution prevention and productivity improvements. This type of assessment typically begins with the team conducting a survey of the plant, followed by one-day site visit and taking engineering measurements. Once the
recommendations are formulated, the team performs a detailed analysis, including performance, cost estimates and payback times. A report detailing findings, recommendations, and the analysis is then sent to the plant.

The second component of this program included research on pyrolysis phenomenon (decomposition of condensed organic substances by heating). The aim of the research was to determine the influence of a particle’s size and shape, and the surrounding temperature, on the dynamics of the pyrolysis process. A numerical code was developed, and computations were carried out for various shapes and sizes of particles, and for various boundary conditions.

**WUT – U-M Interactions**

**Senior Dekaban Fellow Visits the College of Engineering**
Professor Piotr Wolanski visited the College of Engineering in early May 2009, at the invitation of Prof. Wey Shyy, chair of the U-M’s Department of Aerospace Engineering. While at Michigan, Prof. Wolanski presented two seminars: the first, entitled *Research into Development of Rotating Detonation Engine*; and the second, entitled *Development of the 3-D Electrical Capacitance Tomography for Flame Visualization in Combustion Chambers*.

![Professor Piotr Wolanski (center) with the faculty of the U-M Department of Aerospace Engineering after his seminar (Department Chair, Prof. Wei Shyy, at right).](image-url)
Dekaban Fellows Celebrate 2008 Independence Day
Dekaban Fellows and their families who were in Ann Arbor in July 2008 celebrated Independence Day, a national holiday in the United States, at the Michalowski home.

Left to right: Prof. Michalowski, Dr. Kodura, Dr. J. Olszewska, Ms. Kodura and Dr. Olszewski

Plans for 2009-2010

Dekaban Fellowship

New Fellows Arrive in 2009/10
Arrangements were made for Dr. Pawel Oleszczak of Power and Aeronautical Engineering at WUT to spend his six-month sabbatical working with the faculty at U-M Department of Aerospace Engineering. Dr. Oleszczak arrived in Ann Arbor in August 2009. Dr. Apoloniusz Kodura will visit the Department of Naval Architecture and Marine Engineering again, beginning in February 2010. During his visit to Poland in August 2009, Prof. Michalowski met with other potential Dekaban Fellows. Arrangements were made also for Prof. Michalowski to give a short course on the mechanics of granular materials at WUT in winter 2010.
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)
WUT Dekaban Program Committee
Warsaw University of Technology
Professor Tadeusz Kulik, chair, ex-officio
Professor Maciej Jarosz
Professor Jerzy Kozak
Professor Wojciech Radomski
Professor Władysław Włosiński
Professor Piotr Wołański

Dekaban Program Coordinator (U-M College of Engineering)
Professor Radoslaw L. Michalowski
Appendix B

Dekaban Fellow Profiles

Name: Pawel Olszewski
2008-2009 Dekaban Fellow

Institution: University of Michigan, College of Engineering
Department of Mechanical Engineering
(on leave from Warsaw University of Technology)

Title: Visiting Assistant Research Scientist

Address: 1205 Beal Avenue
Ann Arbor, MI 48109

Phone: (734) 763-7471

E-Mail: pawelo@umich.edu

Education: Warsaw University of Technology, MSc ’01, PhD ’06

Research Interests: Numerical modeling of heat and mass transfer processes,
energy storage, renewable energy, energy conservation in
industry, optimization of energy processes

Dekaban Fund Activity: Dekaban Fellow, January 11, 2008 – January 10, 2009;
Post-doctoral Fellow, January 1 – June 30, 2009;
Part-time Lecturer at the U-M Department of Mechanical
Engineering, January 1 – April 30, 2009
Dekaban Fellow Profiles

Name: Apoloniusz Pawel Kodura
2008-09 Dekaban Fellow

Institution: University of Michigan College of Engineering
Department of Naval Architecture and Marine Engineering

Currently:
Faculty of Environmental Engineering
Warsaw University of Technology
20 Nowowiejska Street
00-653 Warsaw, Poland

Title: Visiting Assistant Research Scientist

Address: 2600 Draper Drive
Ann Arbor, Michigan 48109-2145

Phone: (734) 764-6470
Fax: (734) 936-8820
E-Mail: akodura@umich.edu

Education: Warsaw University of Technology, MSc ’99, PhD ’02

Research Interests: Fluid mechanics, hydraulic engineering, measurement methods in fluid mechanics, investigation of water and sewer systems, modeling hydraulic problems, water power plants

Dekaban Fund Activity: Dekaban Fellow, March-August 2008
Appendix C

Visitor Profiles

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

Institution: Faculty of Power and Aeronautical Engineering
Warsaw University of Technology

Title: Professor

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: Warsaw University of Technology, MSc '66, PhD '71;
DSc '79; Professor (title), '89

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

Dekaban Fund Activity: Visited University of Michigan in May 2009 and presented two seminars at the Department of Aerospace Engineering; member of the Dekaban Committee at the Warsaw University of Technology since inception (chairman, 2002-2005)
Visitor Profiles

Name: Radoslaw L. Michalowski
Institution: University of Michigan
Department of Civil and Environmental Engineering
Title: Professor
Address: 2364 G. G. Brown Building
Ann Arbor, MI  48109-2125
Phone: (734) 763-2146
Fax: (734) 764-4292
E-Mail: rlmich@umich.edu
Education: Institute of Fundamental Technological Research, Warsaw,
and Polytechnic University of Poznan, PhD ’80
Polytechnic University of Poznan, MSc ’74
Research Interests: Geomechanics, flow of granular media, engineering
plasticity and limit analysis, reinforced soil, stability of earth
structures, frost action in soils
Dekaban Fund Activity: Dekaban Program coordinator; visited WUT during
February 2009; held meetings with the WUT Dekaban
Committee and with prospective Dekaban Fellows, visitors
and former Fellows
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

By
Peter M. Banks,
Its Dean

THE REGENTS OF THE UNIVERSITY
OF MICHIGAN

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