University of Michigan
College of Engineering

Dr. Anatole S. and Pamela D. Dekaban Fund

2007-08 Annual Report

Prepared by
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Dekaban Program Coordinator

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Warsaw University of Technology
The Court in the Main Building
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Executive Summary

Created in 1993 with the gift of Dr. Anatole S. and Mrs. Pamela D. Dekaban, the Dekaban Program’s purpose 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 center on sponsored fellowships that enable junior faculty from WUT to come to the University of Michigan to collaborate with faculty, gain experience in their respective fields, and promote future joint research efforts. The College of Engineering hosted two Dekaban Fellows during fiscal year 2008 (July 1, 2007-June 30, 2008). The College also hosted one Senior Dekaban Fellow from WUT.

The Fund is fiscally healthy; arrangements have been made for one Dekaban Fellow to join the CoE in February 2010, and the process of selecting one more Fellow is underway.
2007-2008 Activities

Administrative Activity

Dekaban Program Committee
While the Dekaban Program Committee at the Warsaw University of Technology and the U-M Coordinator did not hold a meeting in fiscal year 2008, the chairman of the committee, Pro-Rector Tadeusz Kulik, and the university President (Rector), Prof. Wlodzimierz Kurnik, met with Professor Radoslaw Michalowski during his visit to Poland in May 2008. It was agreed that the next meeting will take place during the spring of 2009.

Dekaban Fellowships

Of primary importance to the Dekaban Program are Dekaban Fellowships. 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 College of Engineering in academic year 2007-08. The Dekaban Program hosted: Dr. Pawel Olszewski, who worked with the Department of Mechanical Engineering (ME), and Dr. Apoloniusz Kodura, who had his home at the Department of Naval Architecture and Marine Engineering (NAME).

Dr. Pawel Olszewski
Dr. Pawel Olszewski joined the College of Engineering in January 2008 as a Dekaban Fellow and assistant research scientist in the Department of Mechanical Engineering. Dr. Olszewski is an assistant professor in the Faculty of Power and Aeronautics Engineering at WUT.

Dr. Olszewski’s work in Poland focuses on the numerical modeling of heat transfer and thermodynamics. In his research, he is attempting to solve problems surrounding underground energy storage, specifically as it relates to the accumulation of solar energy in the ground and its potential use for space heating during winter. During Dr. Olszewski’s first six months at the College, he worked with Professor Radoslaw Michalowski on this research.

In September 2008, Dr. Olszewski began working with Professor Arvind Atreya of Mechanical Engineering on research related to energy conservation in industry. For this research, Dr. Olszewski performed numerical computations for a biomass pyrolysis process (the chemical decomposition of a condensed substance by heating). Also during
his time at Michigan, he was involved in a project of the U.S. Department of Energy’s Industrial Assessment Center (IAC), providing expertise on compressed air systems.

Working at the U-M as a Dekaban Fellow, Dr. Olszewski was able to further extend his knowledge of the Finite Element Method, cooperate with the IAC, develop numerical solutions in pyrolysis process and experiments, and make a presentation of his doctoral dissertation in the National Renewable Energy Laboratory (DOE) in Colorado. As a result of his time on campus as a Dekaban Fellow, he was invited to extend his visit by an additional four months to teach a course on thermodynamics. This extension was sponsored by the Department of Mechanical Engineering.

Dr. Apoloniusz Kodura

Our second Dekaban Fellow, Dr. Apoloniusz Kodura, assistant professor in the Faculty of Environmental Engineering at WUT, worked as an assistant research scientist in the College’s Department of Naval Architecture and Marine Engineering from May through August 2008.

At WUT, Dr. Kodura’s work centers on hydraulics and fluid mechanics, specifically as it relates to two primary areas: water hammer and the changes in pressure that make it dangerous to pipes, pumps and water supplies; and methods for the whole treatment of sludge by utilities.

During his stay at the College of Engineering, Dr. Kodura worked with Professor Guy Meadows at the Marine Hydrodynamics Laboratory. Professor Meadows was instrumental in helping Dr. Kodura arrange experiments. Lab technicians Dave Persons and Ed Celkis also were actively involved in his work.

Dr. Kodura worked to solve problems related to microorganisms that exist in ballast water. These microorganisms can cause serious issues, including damage to and decaying of ballast tanks, as well as human illness due to viruses and bacteria. They also can adversely affect the natural environment when released into water reservoirs to which they are not native. In recent decades, due to changing harbor ecosystems, it has become easier for these microorganisms to survive. Dr. Kodura’s work explores the effects of using cavitation to eliminate the problematic microorganisms.
Professor Anna Sieminska-Lewandowska  
Professor Lewandowska visited the College of Engineering in June 2008. She was hosted by Professor Radoslaw Michalowski in the Department of Civil and Environmental Engineering for two weeks.  

June 2008 marked an important time in a project that is being carried out by the geotechnical group at the University of Michigan. This project relates to health monitoring and damage detection in underground pipelines subjected to ground rupture. The experiments for this project are performed in the Large Displacement Test Facility at Cornell University in Ithaca, New York as part of the national Network for Earthquake Engineering Simulations (NEES). Professor Lewandowska joined the Michigan team at Cornell University, and visited the facility from June 8-11.

While at Cornell, Prof. Lewandowska presented a seminar entitled: “Deep Excavations in Warsaw Clays.” The technical content was presented in the context of the construction of the city metro (underground train). The seminar attracted faculty members and graduate students from both the University of Michigan and Cornell. The seminar was concluded with an extensive and useful discussion.
Symposium on Innovation Brings Many Polish Academic Administrators to New York

Professor Radoslaw Michalowski was invited to deliver a lecture on the Dekaban Program at a symposium held at the Consulate of the Republic of Poland in New York on April 28, 2008. The theme of the symposium was: “Innovation, Technology Transfer, Education, and Implementation.”

The meeting was attended by WUT Rector, Professor Wlodzimierz Kurnik, and Pro-Rector and chairman of the Dekaban Program Committee, Prof. Tadeusz Kulik.
**Other Activities**

*Rector of Poznan University of Technology and Chairman of Civil Engineering Visit the College of Engineering*

The April symposium in New York (reported on the previous page) brought many university administrators from Poland to discuss the role of universities in the development of new technologies and technology transfer. After the symposium, the rector of the Poznan University of Technology, Prof. Adam Hamrol, and chair of Civil Engineering, Prof. Joseph Jasiczak, visited the U-M College of Engineering. They were hosted by Prof. Michalowski.

![Rector Adam Hamrol and the chair of the WUT Civil Engineering Faculty, Joseph Jasiczak, visiting U-M’s North Campus in Ann Arbor.](image)

*Librarian from the Institute of Fundamental Technological Research in Warsaw Visits Ann Arbor*

The Institute of Fundamental Technological Research of Polish Academy of Sciences in Warsaw is a premier institution engaged in engineering research. The Institute will soon be moving to a new location, and the library director, Dr. Boguslawa Lewandowska, visited Ann Arbor to get acquainted with the modern management of both the traditional and digital collections. Dr. Lewandowska visited the College of Engineering in early April, and met with the Director of the Art, Architecture, Science and Engineering Libraries, Dr. Catherine Soehner. The experience gained from visiting the library at Michigan, and other libraries in the U.S., will be used by Dr. Lewandowska in developing the new library and media center at the Institute of Fundamental Technological Research in Warsaw. This visit was initiated by Prof. W. Wlosinski of WUT, a member of the Dekaban Program Committee.
U.S. Faculty Visit Warsaw University of Technology

In May 2008, a group of American faculty members from various universities, associated with transportation and bridge engineering, visited Poland as a bridge over the Vistula River in the city of Bydgoszcz was to be named the Ralph Modjeski Bridge. Born in Poland, Ralph Modjeski (Rudolf Modrzejewski) was, for many years, a leading bridge designer in the United States and is the founder of Modjeski & Masters, one of the leading bridge design companies in the U.S. The group of professors from U.S. universities made three stops in Poland: Warsaw, Cracow, and Bydgoszcz. The visit was organized by the former Dekaban Program Coordinator, Prof. Andy Nowak, currently with the University of Nebraska.

The visit was opened with a one-day Joint Polish-American Workshop at the Warsaw University of Technology on May 12. The coordinator of the Dekaban Program, Prof. Radoslaw Michalowski, was invited to participate in the meeting and deliver a lecture at WUT on technical subjects. This visit was an opportunity to meet with the Chairman of the Dekaban Program Committee at the Warsaw University of Technology, Prof. Tadeusz Kulik.

A group of professors from U.S. universities visited Warsaw University of Technology. From left: WUT Pro-Rector Tadeusz Kulik, Prof. Larry Rilett (University of Nebraska), Prof. Dennis Mertz (University of Delaware), Prof. Gary Fry (Texas A&M), Prof. Bruce Ellingwood (Georgia Tech), Prof. Radoslaw Michalowski (U-M), WUT Rector Wlodzimierz Kurnik, Prof. Andy Nowak (University of Nebraska), Prof. Henry Zobel (WUT)
Getting Acquainted with American Traditions

Independence Day is a much-celebrated national holiday in the U.S. Many families and friends gather on the 4th of July for a traditional cookout. In 2008 the Dekaban Fellows and their families celebrated the holiday at the home of the Michalowskis.

Celebrating the 4th of July
From left: Dr. A. Kodura, Mrs. Kodura, Mrs. Olszewski, Mrs. Michalowski, and Dr. P. Olszewski
Plans for 2009-2010

Dekaban Fellowship

Dr. Apoloniusz Kodura was appointed as a Dekaban Fellow for six months in 2008; his collaboration with the Department of Naval Architecture and Marine Engineering led to plans for a return visit to Ann Arbor for another six months, beginning in February 2010.

At the time of writing this report, efforts are being made to select at least one more Dekaban Fellow for fiscal year 2010.
Appendices

Appendix A

**Dekaban Fund Advisory Council and Program Committee**

**Dekaban Fund Advisory Council**

Dr. Anna Bielinska  
Research Investigator, 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**
Professor Tadeusz Kulik, chair, *ex-officio*
Professor Maciej Jarosz
Professor Jerzy Kozak
Professor Wojciech Radomski
Professor Władysław Włosiński
Professor Piotr Wolański

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

Dekaban Fellow Profiles

Name: Pawel Olszewski
2008 Dekaban Fellow

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

Currently:
Postdoctoral Fellow, LEO Intermittent Lecturer
University of Michigan, College of Engineering
Department of Mechanical Engineering

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 2008-January 2009
Dekaban Fellow Profiles

Name: Apoloniusz Pawel Kodura
2008 Dekaban Fellow

Institution: University of Michigan College of Engineering
Department of Naval Architecture and Marine Engineering
(on leave from Warsaw University of Technology)

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: Anna Sieminska-Lewandowska
   Senior Dekaban Fellow

Institution: Institute of Highways and Bridges
             Departament of Geotechnic and Underground Structures
             Warsaw University of Technology

Title: Professor

Address: Al. Armii Ludowej 16
         00-637 Warsaw, Poland

Phone: +(22) 825 60 78

Fax: +(22) 825 60 78

E-Mail: a.lewandowska@il.pw.edu.pl

Education: Warsaw University of Technology, MSc ’73, PhD ’86

Research Interests: Underground structures, tunnels, deep excavations, soil
                   modelling, evaluation of displacements of structures using
                   FEM, diaphragm walls and ground anchors

Dekaban Fund Activity: Faculty visitor to U-M College of Engineering in June
                       2008; presented a lecture to students and faculty at Cornell
                       University
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 Poznan, PhD ’80
Polytechnic University 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 in May 2008; held meetings with the WUT Dekaban Committee members in Warsaw and New York, as well as with prospective Dekaban Program visitors
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 26th day of September, 1993.

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

s/ Pamela D. Dekaban
Pamela D. Dekaban

THE COLLEGE OF ENGINEERING

By Peter M. Banks,
Its Dean

THE REGENTS OF THE UNIVERSITY
OF MICHIGAN

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