



Notre Dame

R E P O R T

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1991-92

The University

Alumni Association Wins CASE Grand Gold Medal

The Notre Dame Alumni Association has been awarded the Grand Gold Medal for excellence in alumni programming by the Council for the Advancement and Support of Education (CASE). The Grand Gold Medal is the highest honor accorded university alumni organizations in CASE's annual recognition program.

Innovative and aggressive programs related to continuing education and community service have made Notre Dame a leader among university alumni associations.

The office of alumni continuing education offers interactive teleconference series on topics including marriage and parenting twice yearly to a nationwide audience. Additional continuing education projects examine other family-related issues as well as ethics in business, law and medicine.

Community service, long a tradition at Notre Dame, has become a focal point of Alumni Association activities. More than half of the University's 220 clubs are involved in ongoing volunteer work with programs such as Christmas in April and Habitat for Humanity. In April some 125 of the University's 192 domestic alumni clubs participated in Humanitarian Week, a series of community service projects designed to mark Notre Dame's Sesquicentennial.

The association in 1991 held a record 2,291 events attended by more than 123,000 graduates, parents, students and friends of the University.

The 1992 award marks the fifth consecutive year Notre Dame's alumni association has been recognized by CASE. It earned gold medals in 1988 and 1990, and bronze medals in 1989 and 1991.

Graduation Rate for Football Players Earns Honors

The graduation rate of the University of Notre Dame's football-playing students has earned honors from the College Football Association (CFA) for the 11th consecutive year.

Among 14 universities receiving honorable mention from the CFA, Notre Dame was one of just four to graduate better than 90 percent of its football student-athletes.

The top honor in 1992 went to Boston College and Texas Christian University, which shared the Academic Achievement Award by graduating 100 percent of their football student-athletes. Notre Dame was the first school to hit the 100 percent mark in 1988, when the Fighting Irish also won the national championship on the field.

The University of Virginia, Duke and Vanderbilt Universities joined Notre Dame as the only schools to top 90 percent.

The 1992 CFA awards were based on the graduation rates of student-athletes who entered college in the fall of 1986. At Notre Dame, 21 of 23 — 91.3 percent — of those students earned their degrees within five years.

In the 12 years the CFA began monitoring graduation rates, Notre Dame has won the Academic Achievement Award five times, more than any other university.

Tuition Increases Announced

Undergraduate tuition and fees at Notre Dame will increase \$1,145, to \$14,650, for the 1992-93 academic year. The overall cost increase for a residential undergraduate student will total 8 percent. The tuition increase amounts to 8.5 percent, while room and board charges for 1992-93 will average \$3,790, a 6-percent increase.

The University's annual cost increase has been decreasing and the plan is to decrease it further. The current rise in costs is attributed to increasing wages and benefits, improvements such as the ongoing enhancement of the University's computing capabilities, and increasing maintenance expense for facilities such as DeBartolo Hall, a state-of-the-art classroom complex opening in the fall.

Notre Dame continues to rank among the least expensive of the nation's highly selective, private universities.

Graduate school tuition for 1992-93 will be \$14,530, and tuition in the Law School and M.B.A. program will be \$15,240.

The University

B.S. in Engineering and Environmental Science to Be Awarded

The College of Engineering will add a new undergraduate degree program — leading to a bachelor of science in engineering and environmental science — in the Department of Civil Engineering and Geological Sciences.

There is an increasing need for educated professionals to address environmental issues. This program will not only provide the quantitative engineering background but will include a strong base in fundamental science. Upon graduation students with the B.S. in Engineering and Environmental Science will be qualified for employment in firms needing environmental assessment professionals.

Burlington Resources Foundation Funds Fellowships

The University has received an \$80,000 grant from the Burlington Resources Foundation of Seattle to fund five \$4,000 graduate teaching fellowships for four years.

Graduate students receiving the new fellowships will teach one section of the Freshman Seminar each semester while working on their dissertations. The fellowship program will offer doctoral students valuable experience in organizing and teaching a course while promoting novel and imaginative approaches to the teaching of freshmen.

The Burlington Resources Foundation is the major channel of philanthropy for Burlington Resources, Inc. and its principal operating subsidiaries, Meridian Oil Inc., and El Paso Natural Gas Company. These subsidiaries are engaged in the exploration, development and production of oil and gas and the transportation and sale of natural gas.

American Biogenetic Sciences Receives U.S. Patent

A Notre Dame-based biopharmaceutical company, American Biogenetic Sciences Inc., has received a U.S. patent covering its blood clot detection antibody.

ABS's unique monoclonal antibody targets fibrin, the main component of blood clots. The antibody can be used to detect deep vein thrombosis and possibly to locate clots in the heart and lungs. The latter use, if successful, would be a medical breakthrough. Present methods for locating blood clots involve invasive and lengthy procedures that are uncomfortable and dangerous for patients. The ABS antibody could change that.

Using proprietary labelling technology, the antibody is tagged to technetium, an imaging agent. In animal studies the tagged antibody has pinpointed the location of blood clots within 15 minutes after injection. An Investigational New Drug application was filed in March with the Food and Drug Administration for approval to begin the first human trials using the proprietary antibody at West Haven V.A. Medical Center.

Because of its specificity and affinity, this antibody also is being developed to deliver clot dissolving drugs such as tPA and Streptokinase directly to the site of a clot, thereby reducing the cost of treatment and the risk to patient of hemorrhage.

The FDA already has approved a diagnostic kit using another proprietary ABS antibody for measuring fibrinogen in a patient's blood. Fibrinogen has been found to be a more important factor than cholesterol in determining the risk of an impending heart attack or stroke.

American Biogenetic Sciences Inc. is a biopharmaceutical company that conducts research at the University of Notre Dame, as well as two other institutions in Ireland — Trinity College in Dublin and University College Galway. The firm works to develop and commercialize monoclonal antibody-based products for diagnosing, preventing and treating cardiovascular disease and the early detection of Alzheimer's disease and breast cancer. These antibodies are produced from ABS's proprietary virtually antigen-free mouse colony.

Faculty Notes

Honors

Supriyo Bandyopadhyay, associate professor of electrical engineering, was chosen as one of nine electronics teachers in the United States to constitute an Electronics Focus Group sponsored by Prentice Hall to review undergraduate electronics curriculum in U.S. universities and advise Prentice Hall on the publication of appropriate textbooks.

Lillian S. Bell, adjunct professor in the Freshman Writing Program, received the "Woman of the Year," business and professional category, award from the Michiana YWCA at its 13th annual "Tribute to Women" in South Bend, Ind., March 16.

Gary H. Bernstein, assistant professor of electrical engineering, has been named one of 30 scientists and engineers nationally to receive President George Bush's first Presidential Faculty Fellow Awards. Intended to recognize and support young faculty members who demonstrate excellence and promise both in research and in teaching, the awards feature a \$500,000 grant — \$100,000 grant annually for five years — to be used for research and teaching. The program is managed by the National Science Foundation, with final award decisions made by a White House advisory panel.

David M. Betson, associate professor of economics and director of the Hesburgh Program in Public Service, has been appointed to the National Academy of Science's Panel on the Measurement of Poverty and Family Assistance.

Jacqueline Vaught Brogan, associate professor of English, was appointed to the executive committee of the Elizabeth Bishop Society. She was appointed to the editorial board of *Joyful Wisdom*.

Astri L. Gabriel, director of the Folsom Ambrosiana photographic and microfilm collection, upon the recommendation of Dr. Joseph Antall, Prime Minister of Hungary, was awarded the Hungarian Order of Merit by the Government of the Republic of Hungary by Dr. Paul Tar at the Hungarian Embassy in Washington, D.C., May 5.

Rev. Oliver F. Williams, C.S.C., associate provost and associate professor of management, and **Patrick E. Murphy**, chair and professor of marketing, received the Charles C. Slater Memorial Award established by the policy board of the *Journal of Macromarketing* for "the most significant contribution to our field" for the co-authored article titled "The Ethics of Virtue: A Moral Theory for Marketing." The award was announced at the Macromarketing Theory Seminar held in Nijenrode, The Netherlands, May 29.

Activities

John H. Adams, assistant professor of biological sciences, presented the paper "A Family of Erythrocyte Binding Proteins of Malaria Parasites" at the annual Midwestern conference of Parasitologists in Eau Claire, Wis., June 4-5.

Marijan Babic, assistant professor of civil engineering and geological sciences, presented the paper titled "Granular Flow on a Bumpy Inclined Chute" and chaired a session titled "Granular Flows — Theory, Experiments and Simulation" at the ninth Engineering Mechanics Conference held at Texas A&M University in College Station, Tex., May 24-27. He presented a paper titled "Polyhedral Particle Simulations of Surface Ice Flows in River Channels" at the ninth international conference on Computational Methods in Water Resources in Denver, Colo., June 9-12.

Supriyo Bandyopadhyay, associate professor of electrical engineering, authored and co-authored nine papers presented at the annual meeting of the Condensed Matter Division of the American Physical Society held in Indianapolis, Ind., March 16-20. He presented an invited talk titled "Single Electron Electronics" at the Argonne National Laboratory in Argonne, Ill., May 5. He co-authored three papers presented at the National Center for Computational Electronics workshop at the University of Illinois in Urbana, Ill., May 28-29.

Stephen M. Batill, associate professor of aerospace and mechanical engineering and director of the Hessert Center, was invited to present "Flow About Cylinders with Large Scale Surface Protrusions" to the third ONR workshop on Vortex Shedding and Wakes at Ohio State University in Columbus, Ohio, May 28. He participated as a member of the Overview Executive Panel on academic careers in engineering at the NASA/USRA Advanced Design Program summer conference held in Washington, D.C., June 15-19.

Lillian S. Bell, adjunct professor in the Freshman Writing Program, was the guest speaker at "Learning Society of Elkhart County" in Elkhart, Ind., May 20. She served as a guest lecturer at the College of Journalism, University of Georgia, in Athens, Ga., June 1.

John J. Bentley, associate professional specialist in the Radiation Laboratory, presented the paper "Structures and Energetics of Model Spin-Trapping Systems" co-authored with **Keith P. Madden**, associate professional specialist in the Radiation Laboratory, at the 25th Midwest Theoretical Chemistry Conference in East Lansing, Mich., June 4-6.

Faculty Notes

Krzysztof Bobrowski, associate professional specialist in the Radiation Laboratory, presented the paper "Benzophenone Sensitized Photooxidation of Sulfur-Containing Aminoacid. Nanosecond Laser Flash Photolysis and Pulse Radiolysis Studies" co-authored with Bronislaw Marcinak and Gordon L. Hug, associate professional specialist in the Radiation Laboratory, at the 16th DOE Solar Photochemistry Research Conference in Lake Geneva, Wis., May 31-June 4.

Joan F. Brennecke, assistant professor of chemical engineering, co-authored the talk titled "Spectroscopic Study of Local Compositions in Supercritical Fluid Mixtures" with J. Bryan Ellington at the Midwest Thermodynamics Symposium in Hartland, Mich., May 17-19.

Jacqueline Vaught Brogan, associate professor of English, delivered "Textual Bombing or Textual Bonding?: Robinson Jeffers' *Cawdor*" at the American Literature Association Conference in San Diego, Calif., May 30. She organized two panels, one on Wallace Stevens and another titled "Refashioning Modernism," at that conference.

Ian C. Carmichael, associate professional specialist in the Radiation Laboratory, presented the paper "Ab initio Quadratic Configuration Interaction Calculation of the Indirect Spin-spin Coupling Constants in nmr Spectroscopy" at the 25th annual Midwest Theoretical Chemistry Conference in East Lansing, Mich., June 4-6.

Daniel M. Chipman, professional specialist in the Radiation Laboratory, presented the paper "Intensities of Resonance Raman Lines in a p-Phenylenediamine Radical Cation" at the 25th Midwest Theoretical Chemistry Conference in East Lansing, Mich., June 4-6.

Robert R. Coleman, assistant professor of art, art history and design, participated in an NEH Summer Seminar in Rome, directed by Dr. Marcia B. Hall, and sponsored by the Department of Art History, Temple University. The seminar, Roman Painting, 1480-1550, located at Temple University's Rome Program, focused on High Renaissance and Mannerist paintings in light of recent restorations and new approaches to color. Monuments under consideration included the Borgia apartments, the Ceiling and Last Judgment in the Sistine Chapel, Villa Belvedere, Loggia and Stanza of Raphael, Vatican; Oratorio of San Giovanni Decollato, San Marcello, Santa Trinità dei Monti; fresco cycles in the Castel Sant'Angelo, Palazzo Sacchetti, Cancelleria, and at the Villa Farnese at Caprarola.

Donald J. Costello, chairman and professor of electrical engineering, served on the National Science Foundation's NSF Young Investigator evaluation panel for the Directorate for Computer and Information Science and Engineering in Washington, D.C., May 11-12.

Xavier Creary, professor of chemistry and biochemistry, presented a lecture titled " α -Thiocarbonyl and α -Imino vs. α -Carbonyl Cations. On the Importance of C=X Conjunction" at the symposium on Organic Cation Reactivity during the 24th central regional meeting of the American Chemical Society in Cincinnati, Ohio, May 28.

Ronald Dorris, assistant professor of American studies, presented a paper "Recontextualizing the Self: Images of the Teacher in Jean Toomer's *CANE*" sponsored by the College Language Association in Knoxville, Tenn., April 9.

Alan Dowty, professor of government and international studies, delivered the paper "Israel as a Democracy: An Overview" at the annual meeting of the Association for Israel Studies at the University of Wisconsin in Milwaukee, Wis., May 17. He presented the paper "Confidence and Security Building Measures: The Israeli Domestic Dimension" at the conference on Confidence and Security Building Measures: The Arab-Israeli Nexus at York University Center for International and Strategic Studies in Toronto, Canada, May 26-29. He delivered the paper "Human Rights and 'Enemy' Minorities: Implications of the Israeli Arab Case" at the international conference on Human Rights in a New World Order sponsored by the Czechoslovak Academy of Sciences and the Human Rights Committee of the International Political Science Association in Prague, June 9-12.

Ian B. Duncanson, staff professional specialist in the Radiation Laboratory, presented the paper "A Bubble Trap for ESR Spectroscopy" at the 37th symposium and exposition of the American Scientific Glassblowers' Society in Dearborn, Mich., June 22-26.

Patrick F. Dunn, associate professor of aerospace and mechanical engineering, presented the paper titled "Enhanced Droplet Mixing in an Electrohydrodynamic Spray" co-authored with Jeffrey M. Grace at the fifth annual conference on Liquid Atomization and Spray Systems in San Ramon, Calif., May 18.

Leonid Faybusovich, assistant professor of mathematics, presented the talk "Hamiltonian Structure of Dynamical Systems Which Solve Linear/Programming Problems" to the Department of Mathematics at the University of Minnesota in Minneapolis, Minn., June 1. He presented "Flows on Rational Functions, Realization Theory and Algorithms of Numerical Linear Algebra" at the Institute of Mathematics and its Applications in Minneapolis, Minn., June 3. He gave the talk "Hamiltonian Formalism and Optimization Theory" at the Fields Institute of Mathematics in Waterloo, Canada, June 19.

Faculty Notes

Guillermo J. Ferraudi, associate professional specialist in the Radiation Laboratory, presented the paper "Magnetic Field Effects on the Rates of Reactions Between Radicals and Coordination Complexes" at the 16th DOE Solar Photochemistry Research Conference in Lake Geneva, Wis., May 31-June 4.

Richard W. Fessenden, professor of chemistry and biochemistry, presented the paper "Electron Spin Polarization in Photoionization" at the 16th DOE Solar Photochemistry Research Conference in Lake Geneva, Wis., May 31-June 4.

Alfred J. Freddoso, professor of philosophy, responded to Jack Davidson's paper "Aquinas on Ockham's Way Out" at the central division meetings of the American Philosophical Association in Louisville, Ky., April 30.

Mohamed Gad-el-Hak, professor of aerospace and mechanical engineering, delivered an invited seminar titled "The Arts and Sciences of Flow Control" at the Institut de Mécanique in Grenoble, France, May 27. He gave the keynote address titled "Splendor of Fluids in Motion" at the Cinquième Colloque National de Visualisation et de Traitement d'Images en Mécanique des Fluides in Poitiers, France, June 2-5.

Umesh Garg, associate professor of physics, presented the invited colloquium "From Single-particle to Superdeformed: A Multitude of Shapes in ^{191}Hg " at Cyclotron Institute at Texas A&M University in College Station, Tex., May 5. He gave the invited talk "Electromagnetic Properties of ^{181}Ir : Evidence of β -stretching?" at the international conference on Nuclear Structure at High Angular Momentum in Ottawa, Canada, May 18-21.

Gregory I. Gellene, assistant professor of chemistry and biochemistry, presented an invited lecture titled "Symmetry Restrictions in Biomolecular Reactions: A New Kinetic Isotope Effect" at the Gordon Conference on Atomic and Molecular Interactions at Colby-Sawyer University in New London, N.H., July 19.

John D. Halfman, assistant professor of civil engineering and geological sciences, presented the following abstracts at the spring meeting of the American Geophysical Union in Montreal, Canada, May 11-17: "Water Column Structure and Sediment Dynamics, Lake Malawi, East Africa — A Preliminary Look" co-authored with C.A. Scholz, "Deltaic Sedimentation in Lake Malawi (Nyasa), East-central Africa Interpreted from Digital, Single-channel Seismic Data" co-authored with C.A. Scholtz, T.C. Johnson and J. McGill, and "High-resolution Seismic and Side-scan Sonar Profiles From Five Major River Deltas in Lake Malawi (Nyasa), Africa" co-authored with T.C. Johnson, C.A. Scholz, J.A. McGill and L. Laindekafé.

Patrick Horsbrugh, professor emeritus of architecture, addressed faculty, students and guests of the Department of Landscape Architecture, College of Horticulture, on Syneology, Syneotecture, and Syneopolitan Planning, and conducted six seminars on landscape planning and design at Purdue University in West Lafayette, Ind., March 30-April 1. He addressed the 45th annual conference on World Affairs, Session 9, Architecture on Geospace, Geotelture and Geopolitan Planning, was a panelist on four sessions directed to the concepts of cosmography as advanced by Dr. Buchminster Fuller (honored by University of Notre Dame, 1982), and was a panelist for Session 16 on the Arts and Creativity; Session 19, Architecture, The Future; and Session 24, Science: The Solar Energy Age at the University of Colorado in Boulder, Colo., April 5-11.

Paul W. Huber, associate professor of chemistry and biochemistry, presented a talk titled "Structural Polymorphism in the Major Groove of a 5S rRNA Gene and Recognition by TFIIIA" at the conference on RNA Polymerase III Transcription, Asilomar Conference Center in Pacific Grove, Calif., May 21-24.

Gordon L. Hug, associate professional specialist in the Radiation Laboratory, presented the paper "Quenching of Triplet States of Organic Compounds by 1,3-diketone Metal Chelates, Energy and/or Electron Transfer" co-authored by Bronislaw Marciniak at the 16th DOE Solar Photochemistry Research Conference in Lake Geneva, Wis., May 31-June 4.

Carlos Jerez-Farrán, associate professor of romance languages and literatures, presented "Un estudio hagiográfico de la 'escena de retablo' en *Divinas palabras* de Valle-Inclán" at the Kentucky Foreign Language Conference at the University of Kentucky in Lexington, Ky., May 25. He presented "Unveiling the Masculine: Gender Roles and Gender Crossing in Garcia Lorca's *El publico*" at the meeting "Questions of Homosexuality. Lesbian and Gay Studies" at the Institute of Romance Studies, University of London, London, England, June 6.

Eric J. Jumper, associate professor of aerospace and mechanical engineering, presented the paper titled "Model for Oxygen Recombination on Silicon-Dioxide Surfaces: Part 2, Implications Toward Re-entry Heating" co-authored by W.A. Seward at the 30th Aerospace Sciences Meeting held in Reno, Nev., Jan. 6-9.

Prashant V. Kamat, associate professional specialist in the Radiation Laboratory, presented the paper "Decoration of Electrode Surface with Semiconductor Colloids. Photochemistry and Photoelectrochemistry" at the 16th DOE Solar Photochemistry Research Conference in Lake Geneva, Wis., May 31-June 4.

Faculty Notes

Jay A. LaVerne, associate professional specialist in the Radiation Laboratory, gave the invited talk "Application of Radiation Chemical Models to Systems of Biological Interest" co-authored with Simon Pimblott, assistant professional specialist in the Radiation Laboratory, at the conference on Pathways to Radiation Damage in DNA at Oakland University in Rochester, Mich., June 15-18.

A. Eugene Livingston, associate professor of physics, presented a paper titled "Fine Structure of the 2^3P State in Helium-Like Ions" at the annual meeting of the Division of Atomic Molecular and Optical Physics of the American Physical Society in Chicago, Ill., May 20-22. He co-authored four other papers at this conference: "High Angular Momentum Rydberg States in Be-like Ions," "Position-Sensitive Fast-Ion Spectroscopy of Highly-Ionized Atoms," "Two-Photon Decay of Helium-like Bromine" and "Measurement of the 6 P Lifetime in the Cesium Atom."

David Lodge, assistant professor of biological sciences, gave the departmental seminar "Causes and Consequences of Crayfish Invasions in Northern Wisconsin Lakes" at Erindale College, University of Toronto, Toronto, Canada, March 26-29. He gave an invited paper titled "Causes and Consequences of Crayfish Invasions in Northern Wisconsin Lakes" at the annual meeting of North American Benthological Society in Louisville, Ky., May 25-30.

Gilbert D. Loescher, professor of government and international studies, presented the paper "The Refugee Problematique" before the U.N. High Commissioner for Refugees, her senior advisors and the advisory board of international experts in Geneva, Switzerland, May 14.

William D. McGlinn, professor of physics, presented a talk titled "Exchange-Rotations Relationship from Pair Creation" at the Dublin Institute of Advanced Studies in Dublin, Ireland, June 4.

Rev. Ernan McMullin, O'Hara professor of philosophy, gave an invited paper on "Realism and Explanatory Virtue" at a conference organized by the Italian Society for Philosophy of Science in Naples, Italy, March 20-21. He spoke on "Berkeley's Philosophy of Science" at a conference organized by the International Berkeley Society in Newport, R.I., March 27-28. He lectured on "Chancing Conceptions of Science" at Connecticut College in New London, Conn., April 2. He presented "The Indifference Principle in Cosmology" at Western Connecticut State University in Danbury, Conn., April 9. He spoke on "Evolution and Creation: Do We Have to Choose Between Them?" at the Newman Center of the University of Arizona at Tucson, Ariz., April 29.

Rev. Donald P. McNeill, C.S.C., director of the Center for Social Concerns and concurrent assistant professor of theology, was the guest presenter at the vesper service to celebrate Older Americans Month during the 25th anniversary of Greencroft Senior Center in Goshen, Ind., May 3. His reflection "Discovering Old Friends" included some references to how Notre Dame students have learned from visits with older friends in South Bend nursing homes through his course, Theology and Community Service, over the past 20 years.

Juan C. Migliore, associate professor of mathematics, gave an invited lecture titled "Submodules of the Deficiency Module" at the international conference on Zero-dimensional Schemes held in Ravello, Italy, June 8-13.

Michael C. Mossing, assistant professor of biological sciences, presented the poster "Structure and Stability of Engineered Monomers of λ Cro" at the meeting "Receptor Proteins: Structure, Function and Modeling" at the University of Illinois in Champaign-Urbana, Ill., May 29-31.

Daniel J. Pasto, professor of chemistry and biochemistry, presented an invited presentation on "The Controversy of the Captodative Effect" at the 24th Reaction Mechanisms Conference at the University of Maine in Orono, Maine, June 7.

Larry K. Patterson, faculty fellow in chemistry and assistant director in the Radiation Laboratory, presented the paper "Kinetics of Acid-Base Catalyzed Reactions of Chlorophyll a in Pure and Lipid Monolayers at the Air-Water Interface" at the 16th DOE Solar Photochemistry Research Conference in Lake Geneva, Wis., May 31-June 4.

Simon Pimblott, associate professional specialist in the Radiation Laboratory, presented the paper "Independent Reaction Times Modelling of DNA Damage" at the conference on Pathways to Radiation Damage in DNA at Oakland University in Rochester, Mich., June 15-18.

Wolfgang Porod, associate professor of electrical engineering, chaired the session "New Simulation Approaches" at the international workshop on Computational Electronics held at the Beckman Institute at the University of Illinois in Urbana-Champaign, Ill., May 28-29. He co-authored the following poster presentations: "A Numerical Study of Lateral p-n Junctions between Quasi Two-Dimensional Electron and Hole Systems at Corrugated GaAs/AlGaAs Interfaces" with Henry K. Harbury and Stephen M. Goodnick, "A Numerical Study of Transmission Resonances and Zeros in Quantum Waveguide Structures" with Zhi-an Shao and Craig S. Lent, associate professor of electrical engineering, and "A Bistable Quantum Cell for Cellular Automata" with Craig S. Lent and Douglas Tougaw.

Faculty Notes

Joseph M. Powers, assistant professor of aerospace and mechanical engineering, presented an invited lecture titled "Pyrotechnic Modeling for the NASA Standard Initiator and Pin Puller" at the NASA Aerospace Pyrotechnic Systems Workshop at the Lyndon B. Johnson Space Center in Houston, Tex., June 10. He presented an invited lecture titled "Pyrotechnic Model Development" at the fifth NASA/DOD/DOE Aerospace Pyrotechnic Steering Committee meeting in Houston, Tex., June 11.

Joachim J. Rosenthal, assistant professor of mathematics, presented the paper "A Smooth Compactification of the Space of Transfer Functions with Fixed McMillan Degree" at the IMA workshop on Linear Algebra for Control Theory held in Minneapolis, Minn., June 1-5.

Robert P. Schmuhl, associate professor of American studies, gave the invited talk "The 1992 Presidential Race" at the Exchange Club of South Bend, Ind., May 15. He discussed "Ross Perot and Personality Politics in America" on the National Public Radio program "Fresh Air," June 16.

Robert H. Schuler, Zahm professor of radiation chemistry and director of the Radiation Laboratory, presented the paper "Pulse Radiolysis Studies of the Dynamics of the Acid-Base Equilibration in Phenolic Systems" at the 16th DOE Solar Photochemistry Research Conference in Lake Geneva, Wis., May 31-June 4.

Billie F. Spencer Jr., associate professor of civil engineering and geological sciences, presented the talks "Structural Control Design in the Presence of Time Delay" and "Discrete Markov Process Approach to Fatigue Crack Growth" at the ninth Engineering Mechanics Conference in College Station, Tex., May 25-27. He chaired the session "Random Vibration/Reliability" at that conference. He presented the talk "Probabilistic Measures of Structural Stability" and chaired the session "Applications of Reliability Analysis" at the Proban User's Conference in Houston, Tex., May 29.

William Strieder, professor of chemical engineering, co-authored a paper titled "Monte Carlo Calculations of Wall-to-Bed View Factors: Hard Spheres and Fibers" at the 1992 Midwest Thermodynamics Symposium in Ann Arbor, Mich., May 17-19.

Albin A. Szewczyk, professor of aerospace and mechanical engineering, presented an invited lecture titled "On Some Buoyancy Effects in a Turbulent Wake" at the symposium in honor of Shan-fu Shen at Cornell University in Ithaca, N.Y., May 2.

Arvind Varma, Schmitt professor of chemical engineering, presented an invited seminar titled "Optimal Distribution of Catalyst in Pellets" at the research division of International Specialty Products in Wayne, N.J., June 9.

Kwang-tzu Yang, Hank professor of aerospace and mechanical engineering, presented an invited seminar titled "Field Modeling in Fire Research — Where Do We Go from Here?" at the National Institute of Science and Technology in Gaithersburg, Md., June 2. He presented his publication titled "Transition to Oscillatory Flow in Rayleigh-Benard Convection in a Three-Dimensional Box" with D. Mukutmoni at the National Heat Transfer Conference in Minneapolis, Minn., July 28-31.

Deaths

Adolph G. Strandhagen, professor emeritus of aerospace and mechanical engineering, June 24.

Documentation

Colloquy for the Year 2000

Committee on Finances, University Relations and Athletics

May 19, 1992

Father Beauchamp convened a special meeting of the Committee on Finances, University Relations and Athletics on Tuesday, May 19, 1992, at 3:30 pm in Room 200 of the CCE. The purpose of the meeting was to discuss the revised draft of the *Statement of Human Resources at the University of Notre Dame*. A copy of the draft is attached to these minutes.

Members Present: E. William Beauchamp, C.S.C. (chairman), Paul Doyle, C.S.C., Thomas Mason, Daniel Reagan, Claudia Kselman, Vincent DeSantis, Roger Jacobs, Terence Linton, C.S.C., Maureen Gleason, Joseph Russo, Jennifer Warlick, William Sexton, William Wilkie, Michael Hamilton, Kathleen Anthony.

Members Absent: Scott Malpass, Richard Rosenthal, Steven Trust, Richard Sheehan, Barry Keating, Susan Sattan, James Kuser, Ernest Bartell, C.S.C., Gerald Jones, Panos Antsaklis.

Father Beauchamp opened the meeting by restating the purpose of this meeting: to discuss the May 12 preliminary draft of the *Statement of Human Resources at the University of Notre Dame* which was written by the Subcommittee on Human Resources. This is the second draft of the statement sent to committee members.

Claudia Kselman reviewed the changes that had been implemented since the initial draft, including the addition of the statement "*while pursuing affirmative action goals*." A discussion ensued about the need for this change, how it is presented, and how it is different from stating that the University is an equal opportunity employer.

A suggestion was made to make this concept a separate sentence at the end of the Human Resource statement, consistent with many company statements: "*Notre Dame is an equal opportunity employer. . .*" However, saying that Notre Dame is an equal opportunity employer does not communicate the affirmative action message we are trying to emphasize. Per HR Subcommittee members, Roger Mullins, director of Human Resources, felt it better to clearly state our non-discrimination policy and affirmative action intentions.

It was then suggested to separate the "*while pursuing affirmative action goals*" from the connecting statement "*. . . without regard to . . .*" A discussion followed.

The committee must first determine what it truly wants to emphasize in the opening statement. Many people feel that

"best" is what we should emphasize. If that is the case, should the entire "*. . . without regard to . . .*" statement be a separate sentence?

The committee discussed the meaning of "best": what is actually meant by this? Is it enough? How would different groups on campus interpret this? It was noted that this would be a good way to begin group discussions about the statement.

Several possibilities for presenting the first paragraph information were suggested, including "*This goal will be pursued. . .*" to begin a second sentence, after the first sentence is ended with "*best*."

Questions were raised about the last sentence in the second paragraph: Does this belong at the end of paragraph 1? Seems to fit there, if it is needed. Do we need at all? First paragraph seems to cover.

Members of the Human Resource Subcommittee explained they are trying to convey that the University will often pay for these pursuits, which is why it is in the compensation section (paragraph 2). Would changing the statement to read that "*Notre Dame supports professional . . .*" make it clearer? Several people continued to feel it was unnecessary. The subcommittee will contact Roger Mullins to obtain standard verbiage on professional development statements.

The committee then discussed the purpose of this "*Statement of Human Resources at the University of Notre Dame*." Initially, it will be used to stimulate discussions with various groups on campus meeting with the Human Resource subcommittee; in the end, after the groups help define the statement, it will probably be published in the Colloquy report.

Father Beauchamp stressed the importance of defining for all what the statement is, and what it will be used for. The HR Subcommittee will make sure the draft is clearly marked "Draft, For Discussion Purposes."

Retired people are not specifically addressed in the statement (i.e., retirement package, insurance, etc.). Subcommittee should explore the continued role of retired employees with the University, and determine whether this is appropriate to include.

Mr. Hamilton commented on paragraph 3 of the statement, stating that he feels the first sentence is "lukewarm." It seems that we are defining what Catholic heritage is by the rest of the sentence. It was decided to end the sentence after "character."

Also, should we make a statement that the University affirmatively tries to hire Catholic faculty? A discussion ensued.

Documentation

In conclusion, the subcommittee will incorporate many of the ideas raised at the meeting in another draft of the statement. This draft will be used for group discussions this summer. A copy of this draft will be sent to all committee members.

Respectfully submitted,

Kathleen W. Anthony

Preliminary Draft of a Statement on Human Resources at the University of Notre Dame

*Drafted by the Subcommittee on Human Resources of the Colloquy for the Year 2000
May 12, 1992*

The University of Notre Dame seeks to attract, develop and retain the best faculty, staff and administration possible without regard to race, color, gender, age, national and ethnic origin or disability while pursuing affirmative action goals. The objective of employing the best people is addressed through compensation, opportunities for scholarly growth and career development, clear organizational policies and the campus environment.

The University seeks to develop and maintain a total compensation program consisting of wages and benefits that is equitable, affordable and competitive in the appropriate markets. The University aspires to compensate in a manner which compares favorably with other universities and similar institutions. Notre Dame attempts to offer a flexible compensation program that provides a variety of options. The University also recognizes individuals by offering them job security and promotion from within. Notre Dame encourages professional development for faculty, staff and administrators.

The University values its Catholic heritage and character and encourages faculty, staff, students and administrators to be socially responsible and ethical members of their communities. The University expects a spirit of cooperation and a high standard of performance and flexibility from its people. Notre Dame recognizes that it is important for individuals to derive a sense of achievement and satisfaction from their work and thus seeks to promote communication, trust and understanding. The University believes that people at all levels determine the character and strength of the institution.

Faculty Senate Journal April 7, 1992

The chair professor Paul Conway opened the meeting at 7:32 p.m. in room 202 of the Center for Continuing Education by calling upon Professor John Yoder to offer a prayer. The journal of March 2, 1992, was approved as amended by motion of Yoder (seconded by Professor Donald Sporleder). Professor Frank Connolly (seconded by Professor Philip Quinn) moved to change the meeting agenda in order to consider the resolution of no-confidence immediately, which the senate approved doing. The chair reported on a sequence of recent events: Professors David O'Connor, Quinn and Conway had met over the previous 10 days with the provost of the University to discuss the resolution of no-confidence and had kept the executive committee informed of these meetings. It seemed appropriate as these discussions moved along to invite the provost to address the full senate at this meeting (April 7), and the executive committee extended the invitation.

At this point in the meeting, the senate went into recess to discuss the resolution of no-confidence and issues surrounding it with the provost, Timothy O'Meara, who was present for this meeting. A summary of the discussion follows. The provost assured the senate that he was speaking for the president; both are concerned with the issue of morale among faculty. Although the president's veto in the Academic Council will stand they are also concerned with improving the quality of discussion there. Toward this end, the provost will ask the council's executive committee to approve a standing committee structure and other changes to make it function better (agenda, number of meetings). This had been a major point in the governance proposal vetoed by the president. The provost also asked the senate to begin to discuss in a serious way the question of the Catholic character of the University; he is optimistic about the Colloquy's outcome if we all work together on it and after some changes in attitude and composition are made on it; the forum idea is a source of controversy, but was seen by the president as a way to reach out and to emphasize faculty participation.

Many senators then joined in the discussion, generally speaking in disappointed terms about the way the administration has treated faculty concerns about participation in governance, treatment which has led to the current state of affairs. The provost listened to these remarks and responded by assuring the senate that he would take these expressions of concern to the president and report to him on these deeply-held feelings. After more than an hour, the chair cut off the discussion with the provost, asked him to remain at the meeting if he wished to do so, and called the senate back into session.

Documentation

Quinn reported that the administration has taken two welcome initiatives in response to the resolution of no-confidence: the appearance of the provost at this meeting to discuss the issues in a frank and open manner; and the president's letter of April 2, outlining steps and ideas to involve faculty more in governance. But we have been asked to take a lot on faith. Is this justified? History says no. We should have specific policy commitments before we back off the no-confidence resolution. O'Connor concurs with Quinn, welcomed the openness of the president and provost to discuss issues. Sheehan also agreed, and added that the resolution was not meant to harm the University, only to open a dialogue which heretofore had been closed. He was especially concerned on the Catholic character issue; the laity must work to maintain it. He was still looking for a signal that the administration's attitude had changed. Connolly was disappointed in the very modest response of the president, but thought perhaps a two-week delay in voting might allow time for further discussions and consultations. Senators disagreed on whether such a delay would be helpful. Professors Joseph Blenkinsopp and Supriyo Bandyopadhyay thought the vote should come immediately, while Yoder and Professor Timothy Scully, C.S.C., believed a two-week delay would be beneficial in view of the movement we have already seen.

At this point, the chair was requested to ask the provost to leave while the discussion continued, in order to give senators a chance to speak more freely. Other senators reminded the senate that as a faculty member the provost was entitled to attend senate meetings. He remained, and the discussion continued.

Timothy Schoen, the representative of the Graduate Student Union, wanted to see genuine change, especially in the treatment of graduate students; the faculty can lead the way for this change and should not be intimidated. Professor William Eagan asked the senate to beware being sold a bill of goods by the administration. Professor Charles Parnell thought the senate was on the spot because of the media discussion of this issue. Professor Sophia Jordan believed the evidence available leads to only one conclusion: no confidence. Professor Peter Moody, while supporting a voting delay, thought it shameful that progress had been made only under such threatening circumstances.

Professor Thomas Cashore asked what signal would we be looking for in the next two weeks? Several senators responded. Professor Mario Borelli thought a joint faculty/administration committee would be one. Professor Stephen Fallon said that "all issues on the table" would be another. Conway felt a meeting with the president would be a third. Quinn and Power agreed that these were good signs of cooperation. Power added that he was disturbed by the president's insistence on proportionality; this needs discussion. Connolly formally moved to postpone the discussion

for a two-week period and continue it at a special meeting; Borelli seconded. O'Connor favored a postponement; movement has occurred but he wants to see more. Professor Anand Pillay called the question (Borelli seconded). By voice vote the senate postponed discussion. It was agreed that it would resume on Wednesday evening, April 22.

The senate then turned to other business. O'Connor, seconded by Power, moved to send another letter to the Trustees on the reappointment of the provost after its chair's response to an earlier communication. The letter was drafted by Sheehan. After some favorable discussion, the senate voted to send the letter to the chair of the Board of Trustees with copies to all Trustees. It is presented as Appendix A of this journal. Connolly asked for approval of an expenditure of funds for an *Observer* ad in which Academic Council elected faculty members voiced their disapproval of the president's veto (seconded by Quinn). Scully spoke in opposition, saying the matter should have been proposed before being done. Professor Tageson called the question, and the senate voted 34 in favor, five in opposition, one in abstention to approve.

The senate adjourned at 9:55 p.m.

Respectfully submitted,

Peter J. Lombardo Jr.
Secretary

Present: Affleck-Graves, Bartlett, Bentley, Blenkinsopp, Borelli, Cashore, Chang, Collins, Connolly, Conway, Esch, Fallon, Fazio, Garg, Harmatiuk, Jenkins, Johnson, C., Johnson, P., Jordan, Kenney, Leighton, Litzinger, Lombardo, Miller, Moody, O'Connor, Parnell, Pattison, Pillay, Power, Powers, Quinn, Sauer, Scully, Sheehan, Sporleder, Tageson, Tidmarsh, Vecchio, Welle, Yoder, Schoen, Eagan

Absent: Antsaklis, Boyd, Day, Falkenberg, Goetz, Hayes, Nichols, Smyth

Excused: Serianni, Varma

Documentation

Appendix A

Draft of Response to Board of Trustees Regarding Provost's Review

Dear Members of the Board of Trustees:

In the fall of 1991, while formally confirming the President and Executive Vice President in their offices, the Board of Trustees ignored the Academic Articles of the University by confirming the Provost, the chief academic officer of the University, without the mandated review by a faculty board selected from the Academic Council. Shortly thereafter, the Faculty Senate expressed its dismay to the Board of Trustees, stating that the Senate considered the process a serious breach of established procedures. In his letter of 1-29-92 to the vice chair of the Faculty Senate, the chairman of the Board of Trustees explained the process as follows:

The timing [of the Board's confirmation of all three top administrators] proved awkward because the Academic Articles provide for a separate review of [the Provost], but for the Board to have acted in regard to two top officers while delaying a decision on one would have been even more awkward. . . . Informal evaluations of all officers of the University are done at each spring meeting of the Board, providing an on-going process which culminates in a formal review such as [the one] recently completed.

This letter is intended to apprise the Board about the faculty's view of the Academic Articles as well as of the Board's confirming the Provost prior to undertaking a formal review.

The Preamble to the Academic Articles states "The Articles define the structure of academic governance at the University, and the participation of faculty, students, and administrative officers therein, so that all who sustain the University's academic life may be united in cooperative understanding and effort." The Articles stress cooperation. Their nature also indicates to the faculty that the Articles are part of the contract between the faculty and the University. The faculty believes that they may be held to those Articles in very rigorous fashion (specifically, Article III Section 6 Dismissal for Serious Cause) and thus believes that the Board and the Administration also should adhere to the Articles in rigorous fashion.

The faculty understands the awkwardness in delaying the Provost's confirmation and also recognizes that the average faculty member may lack the expertise of the members of the Board of Trustees in business affairs. However, while some may consider the confirmation of the Provost simply a minor or technical violation of the Academic Articles, the faculty's interpretation is substantially different.

As academics at an academic institution, we believe that any awkwardness is a minor consideration in comparison to the importance of a responsible review of the chief academic officer. Confirming the Provost prior to a formal review naturally leads faculty to question whether their input truly is sought. Indeed, the appearance of no real faculty input into the confirmation process of the chief academic officer deeply offends the faculty's sense of community in what should be a community of scholars. Again, we must stress that our concerns have no bearing on the conduct or performance of the current Provost.

The purpose of this letter is not to hector the Board of Trustees. The Faculty Senate's goal is simply to inform and educate the Board about the faculty's view of the seriousness of this breach of the Academic Articles. We hope that our concerns are clear and that in the future the Board of Trustees will accord the same respect for the Academic Articles as the faculty believes it does. In conclusion, it is again appropriate to quote the preamble of the Academic Articles: "The Articles . . . can neither wholly embody nor effectively replace the deeper, more fundamental basis of successful governance: the community's mutual respect and common concern." With that in mind, let us put this incident behind us so that Notre Dame can continue to grow in a spirit of trust and community.

Documentation

Faculty Senate Journal April 22, 1992

The chair Professor Paul Conway called a special meeting of the Faculty Senate to order at 7:35 p.m. in room 104 of the Center for Continuing Education. Professor Timothy Scully, C.S.C., offered a prayer for guidance. Conway announced that the sole business of the meeting was the resolution of no-confidence. The joint statement of April 16 is printed as Appendix A of this journal. He asked professor Philip Quinn to brief the senate on recent events.

Quinn reported on a series of meetings among the president, provost, members of the executive committee and himself. With what he termed "sober realism" he believed progress had been made: perhaps modest in comparison to other institutions, but substantial in relation to Notre Dame. He had cautious hope and guarded optimism that further faculty participation in governance was assured. The formation of a committee of faculty and administrators and the dropping of the forum idea especially offered a window of opportunity for legitimate progress without an atmosphere of crisis. He favored withdrawing the resolution of no-confidence.

Professor William Eagan offered a lesson from history. In the '60s, in order to coopt faculty concerns the University created a "faculty senate" without real power but a body it could control rather than work with an outside group like the AAUP. In the '70s, faculty grievances were so high that more than a third of the faculty requested an NLRB union election to which Fr. Hesburgh vigorously objected; this initiative died in the wake of substantial salary increases. The administration has used a "divide and conquer" strategy often, and they are doing it again.

Professor V. Paul Kenney saw history in a different light. Before 1967, without a senate, the faculty had no recourse; since then, it does. A path of confrontation had been unsuccessful because it was "self-indulgent," — it simply turned off people, faculty and administration alike. The "joint statement" offers an opportunity for progress. Drop the no-confidence resolution. Professor Joseph Blenkinsopp had some misgivings on the joint statement. Why would the executive committee recommend withdrawing the no-confidence resolution and "speak with confidence" about the future? Nothing has changed. The Fellows of the University still have control; despite the 1967 turnover the Holy Cross — Indiana Province retains its hold on policy. We should have voted for the resolution, then negotiated a compromise. Conway pointed out the executive committee can only recommend withdrawing the resolution; the senate has yet to vote. Blenkinsopp thought the senate should have been advised of the ongoing discussions. Conway believed the senate had authorized such deliberations by

agreeing to a two-week delay on April 7; the purpose was to seek a signal.

Professor Richard Sheehan believed confrontation was not fruitful. At our last meeting we asked the administration for a sign, and we got it: there was substantial movement, and the executive committee would have been remiss in not responding to it. With the joint statement, we received a willingness to talk; he was optimistic that the administration now knows the costs of not following through. It's too bad we had to go to the precipice to get movement. Professor Anand Pillay presented a statement from Professor Frank Connolly who had to be off campus this evening; he supported withdrawing the resolution. For himself Pillay too favored withdrawal. The attitude of confrontation had been the administration's with its veto not the senate's. The response has been modest but progressive. Fundamental differences remain, especially on the questions of advisory vs. legislative participation and proportionality. But their willingness to participate in a summer committee is a good sign of a change in attitude. He would have preferred the publication of the joint statement after this meeting not before. Still there is hope for serious discussion. Professor Thomas Cashore asked if the executive committee was unanimous in its recommendation of withdrawal. The chair replied yes.

Discussion continued. Professor Stephen Fallon asked how the executive committee could "speak with confidence"? Was there undue pressure to do so? If so from whom? The document shows encouraging motion in regard to the Academic Council and Provost's Advisory Committee, but he wanted to know who would be on the summer committee. Professor David O'Connor was perturbed about the way the joint statement was released, but he was enthusiastic about the opportunity for progress. The openness on financial matters was most crucial; it gives faculty the chance to participate in a meaningful way in strategic planning, especially in their college councils. The summer committee is a sincere commitment to move to a university's normal state of "deep disagreement and vigorous debate." Progress has been made, more is needed and will come.

Professor Sophia Jordan pointed out that the library and its faculty were not mentioned in the document. Conway and Quinn thought the summer committee can correct such oversights in its composition. Eagan urged the senate to vote on the no-confidence resolution, one way or the other; he thought evidence of the president's goodwill would have been to withdraw his veto. Professor William Tageson had little faith in goodwill until he met with the president and provost and saw that they were giving in. When they realized we were serious about true deliberation, they relented. There is now reason to hope that more progress is to follow. Professor Sandra Harmatiuk spoke of the nearly three years of administrative intransigence on the issue of faculty governance. Now what is new is that they are showing good

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faith. Blenkinsopp had some "mystification" on parts of the document: the Academic Council may still not be responsive; although the president agreed to drop his forum idea, it reappeared as a possible topic for the summer committee; there is no give on proportionality, nor is there any improvement in the Colloquy 2000. Quinn responded that if the summer committee saw any merit in parts of the forum, it was free to address them; it does not have to. Professor John Affleck-Graves believing that support for no-confidence stemmed from administrative intransigence, saw good faith in the joint statement; the senate should also show good faith, flexibility and compromise.

Professor Clark Power recognized that the document contained mostly promises (except the concrete items about the Academic Council and PAC), but he was impressed by the administration's substantial goodwill. The senate should respond in kind. However, he had reservations: for example, the president did not give on proportionality. He favored talk not confrontation. Captain James Pattison spoke of the uniqueness of Notre Dame and its Catholic character; the faculty has to carry it through and maintain it. Professor Charles Parnell congratulated the executive committee for achieving the joint statement. Jordan thought the vote should be taken. Cashore asked if the senate has had an impact on the University's academic life? This document proves we have, he answered. O'Connor returned to the administration's attitude of intransigence; this has now been reversed. Issues they would not even discuss before are on the table. This is progress on some substantial issues, but there is more work to be done. The no-confidence resolution is no longer an appropriate response to the current situation. Timothy Schoen, of G.S.U., hoped that graduate student issues and concerns could also be discussed in this new atmosphere; for too long they have been "non-negotiable." Sheehan recalled that two weeks ago the senate asked for a signal, and the administration responded. Confidence and goodwill work two ways.

The secretary Peter Lombardo moved to ask the sponsor of the no-confidence resolution for permission to withdraw it from senate consideration. Harmatiuk seconded. Power agreed to do so. The senate voted 39 in favor, four opposed, four abstentions.

Tageson moved to adjourn, Lombardo seconded and the senate agreed at 9 p.m.

Respectfully submitted,

Peter J. Lombardo
Secretary

Present: Affleck-Graves, Blenkinsopp, Cashore, Chang, Collins, Conway, Esch, Fallon, Goetz, Harmatiuk, Jenkins, Johnson, C., Johnson, P., Jordan, Borelli, Kenney, Leighton, Litzinger, Lombardo, Miller, O'Connor, D., Parnell, Pattison, Pillay, Power, Powers, Tidmarsh, Quinn, Sauer, Scully, Serianni, Sheehan, Sporleder, Tageson, Vecchio, Welle, Yoder, Fazio, Schoen, Eagan

Absent: Bartlett, Bentley, Boyd, Day, Falkenberg, Hayes, Moody, Nichols

Excused: Antsaklis, Connolly, Garg

Appendix A

Joint Statement April 16, 1992

The President of the University of Notre Dame, Edward A. Malloy, C.S.C., the University Provost, Timothy O'Meara and the members of the executive committee of the University's Faculty Senate have been meeting, individually and collectively, over a period of ten days to resolve issues arising from the Faculty's concern over their role in University governance. After a Senate meeting on April 7, at which Provost O'Meara spoke frankly, answered questions in an open atmosphere and listened intently to the expressions of disappointment of faculty members, a series of meetings was held which culminated in a lengthy session on Wednesday, April 15. In an effort to take advantage of the opportunities for progress presented by these discussions and to enhance the standing of the University, the President, the Provost and the Senate executive committee agreed at this meeting on several important matters:

1. The Academic Council was to restructure itself, including the establishment of standing committees (but not one on budget affairs), an increase in the number of meetings each year and publication of the agenda well in advance of the meeting date. These reforms are to be worked out by the Council's own executive committee and presented to the full Council for appropriate action in its first meeting of the Fall '92 semester.
2. The Provost's Advisory Committee is to be increased in number by five, with a senior faculty member to be elected by each college and the Law School for full membership and participation in this committee.
3. A fundamental commitment to openness on the issue of University finances and the budget will be established. All consultative bodies are to have access, on a "need to know" basis, to University financial affairs in a manner similar to the way members of Colloquy 2000 have had.

Documentation

Such bodies would include the Academic Council, College Councils, Graduate Council and departments, centers and institutes. This action is taken in order that the information necessary for responsible leadership and action be available. Further, the Provost will write an annual letter to the faculty that will spell out the state of the University's financial situation, will describe current and anticipated problems and will seek faculty response and participation in resolving such problems.

4. The President, the Provost and the Deans will make an explicit commitment to strengthening the College Councils and Graduate Council. These bodies will be revitalized, if necessary, and given a role in setting priorities, reviewing programs, looking at the allocation of resources, and seeking solutions to general policy questions in their domain.
5. The President has agreed to drop his proposal for a University Forum.
6. The executive committee of the Faculty Senate will recommend to the full Senate the withdrawing of the no-confidence resolution. This had been introduced into the Senate as a result of the Faculty's concerns over their role in governance. The executive committee members will speak with confidence about this agreement and the direction the University is taking for further development.
7. The President, the Provost and the Senate executive committee will encourage all faculty members to participate fully in Colloquy 2000. The President will be open to maximizing faculty participation in the Colloquy so that the quality of its final report will fully reflect the academic concerns of the Faculty.
8. An administrative/faculty working committee will be formed to review through the summer of 1992 the avenues for further faculty participation in the life of the University, as listed below. This committee will consist of the President, the Provost and five individuals appointed by the President; and the seven faculty members who have been elected to serve on the University's Board of Trustees Academic and Faculty Affairs Committee. At least an interim report should be prepared and published by September '92. This committee is directed to consider especially the following concerns:
 - a. The possibility of a University Forum.
 - b. The possibility of a President's Advisory Committee, which would not interfere with the established structures of the University.
 - c. How faculty might best participate in strategic planning for the University.

9. The Senate will immediately or as soon as practical begin two studies:

- a. a self-study of its responsibilities, responsiveness and membership, including looking at the possibility of including as an ex-officio member the provost of the University.
- b. a study of the role of the faculty in establishing and maintaining the Catholic identity/mission of the University; this study would look at all aspects of the question, involve the founding religious community, and seek to become a permanent standing committee of the Senate, as well as the start of an ongoing dialogue among all members of the Notre Dame community on this vital issue.

The President, the Provost and the members of the executive committee of the Faculty Senate agree that this outcome ranks in historic significance with the turn-over by the Holy Cross Fathers, Indiana Province, of University control to a predominantly lay board of trustees in 1967. It signals an openness and reflects a degree of trust that works two ways. All parties look forward to the implementation of this agreement and the fruitful dialogue and enhanced reputation for the University which will flow from it.

Final statement agreed to Thursday, April 16, 1992, by

T. O'Meara and P. Conway

Report on the Natural Areas of the Notre Dame Campus

During the past few years concerns have been raised about campus development as it affects the remaining natural areas that exist on Notre Dame property. The campus has undergone many changes in use since its beginnings in 1842. Our purpose here is not to discuss these events, but merely to examine five areas on campus that are a valuable natural resource worthy of protection. We will propose three categories of use for undeveloped areas of natural and aesthetic value and scientific interest.

In 1841 Rev. Basil Anthony Moreau, C.S.C., sent Rev. Edward Frederick Sorin, C.S.C., and a number of Holy Cross brothers to teach in the bishop's diocesan schools in Davies county in southern Indiana. Father Moreau was the founder of the religious community, The Congregation à Sancte Cruce or Congregation of Holy Cross (C.S.C.). The following year Sorin and a group of brothers came to St. Joseph County to establish diocesan schools, a novitiate and a college. In 1844, 524 acres of largely wooded land in St. Joseph County was deeded to Rev. Basil Anthony Moreau, C.S.C., in Le Mans, France, by the bishop of Vincennes. After 17 months at the Notre Dame campus location, 140 acres were cleared for a farm to support the new settlers. Expansion of the campus has continued through the years and uses of the land have changed from agricultural to academic.

The Campus Natural Areas Committee was formed as a subcommittee of the Environmental Issues Committee to advise it about the significance of natural areas in future development of the campus. It consists of faculty and staff representing natural science, history and resource management. Those serving on the Campus Natural Areas Committee are John Delee, Robert McIntosh, Thomas Schlereth, William Thistlewaite and David Woods. The Campus Natural Areas Committee has developed a working plan for the stewardship of six natural areas defined later in this report. This plan will be a guide for the University Administration in planning and management of the campus. It will also serve as a guide to the academic use of these resources.

This committee has surveyed the campus properties as they now exist. Five areas located on the campus property are designated as woodlands or wetlands. We will define these five areas and explain the attributes of each as natural areas that enhance the Notre Dame campus. These areas provide important examples of our rich natural heritage and represent significant, accessible resources for teaching, research, demonstration, nature appreciation and are important aesthetic components of the campus.

NATURAL AREAS

I. Introduction

From the beginning of the University in 1842 the original 524 acres granted to Father Sorin, and additional acreage subsequently acquired by the University, have been subjected to diverse and increasingly intensive use and development. The University was established in an area with a long history of climatic and vegetation changes and was first traversed and then occupied by native American populations with hunting and later agricultural traditions.

The original land survey of this area was done in 1829. The surveyor's records show a mixture of open forest, oak opening or "barrens" and prairie on the uplands. The immediate vicinity of Notre Dame in 1829 was predominantly oak woodland (86 percent of the trees were oak) and was variously described by the surveyors and "Good Barrens," "Timber Oak, no undergrowth" or "thinly timbered." Father Sorin and his associates developed a French version of the Jeffersonian ideal of a campus as rural, agrarian and planned, and rapidly created a largely new landscape. The central core of the University was developed as a college yard, and campus mall with a Victorian arboretum, expanded as a collegiate-Gothic campus of several quadrangles with avenues of trees and extensive planned plantings and has grown into a public University complex beyond the dreams and plans of its founders.

The areas peripheral to the original campus were initially largely cleared for pasture and agricultural fields and associated farm buildings. In 1900 the Notre Dame farms encompassed approximately 1100 acres and the farms continued until World War II. Subsequent to that time the University abandoned the farms incorporating much of the area into its rapidly expanding and transformed campus. Substantial acreage, north of Douglas Road, was largely left undeveloped as abandoned agricultural "old fields."

In the context of the enormous development of the campus landscape there has been considerable attention to the essential attributes of a large university campus, buildings and services, roadways, parking areas and the associated landscaped areas of malls, gardens, foundation plantings and other amenities. The original pastoral university setting has become imbedded in areas of residential and commercial development protected largely by its own land acquisition and associated properties of Saint Mary's College, Holy Cross College and the Holy Cross order. The original 524 acres of the University now includes some 1250 contiguous acres. About 900 acres are in associated areas of the mall, athletic fields and planted areas. Some 350 acres remain undeveloped as old fields and woodland.

Documentation

This committee was charged to identify areas of the campus of special concern as to variety of plants. The survey may serve to weigh plans of future expansion "against possible loss of a natural asset of the University of Notre Dame."

The committee identified areas of University property having significance as natural or semi-natural areas, as distinct from built on, managed or formally planted areas. It is our purpose to indicate reasons why they are significant to the University environment and to suggest mechanisms that will serve to weigh these values against competing demands for development.

II. Natural areas proposed for the Notre Dame Campus (Fig. 1).

The committee identified six areas of the campus that have some of the qualities of natural areas and which have aesthetic, historical and scientific values that must be considered in plans for future development.

The areas are:

1. A forest stand extending east on Douglas Road from the road to Married Housing.
2. A forest stand north of the Loftus Center and the Eck Tennis Center extending north to Bulla Road and east toward Ivy Road.
3. A forest stand on the west end of St. Joseph's Lake along the road to Saint Mary's College.
4. A riparian wetland belt on either side of Juday Creek from Ironwood Road to the Indiana Toll Road.
5. A forest stand north of Fischer Graduate Student housing.
6. The several islands in St. Joseph's and St. Mary's lakes.

Area 1. Forest on Douglas Road near Married Housing.

This area is essentially level land and includes approximately 7.5 acres extending 185 yards along the road to Married Housing and 178 yards east along Douglas Road. The western portion is the oldest, largest and best representation of oak forest remaining on University property. It is dominated by large forest-grown red or black and white oaks. The largest of these are 3 to nearly 4 feet in diameter. Stumps of the same species grown on the campus about 2 - 2.5 feet in diameter are 125 - 151 years old, dating from 1836 to 1849, essentially contemporary with the founding of the University. It is probable that the larger oaks in this stand antedate the founding of Notre Dame. There is no indication that this forest was ever heavily cut, although it may well have been grazed, since the founding of the University.

In the absence of extensive disturbance, this area is now in a later stage of the process of change known commonly as succession. A recent sample of trees over 4 inches and saplings less than 4 inches diameter shows the following tree composition.

Table 1. Tree composition of the natural area on Douglas Road.

Species	Trees > 4"	Saplings < 4"
Red Maple	16	21
Red Oak	8	2
White Ash	6	6
Sugar Maple*	3	5
White Oak	2	0
Sassafras	1	0
Black Cherry	1	5
Black Gum	1	0
Elm	0	1

*Some may be Norway Maple.

Tree density is about 207 per acre.

The oaks, as is commonly the case, are not replacing themselves and the forest will become increasingly dominated by maples and ash in future decades.

This forest stand has been used for research in a study of mosquitoes by Professor George Craig of the Department of Biological Sciences. It is also regularly used as a teaching area by Professor David Lodge of Notre Dame and Professor Richard Jensen of Saint Mary's College.

On the east edge of the stand is a row of concrete posts marking an old fence line that once separated it from an adjacent forest more recently acquired by the University. This stand is similar in its general history by the large oaks and other trees which were cut some time before 1960. It has interest for comparison with the adjacent uncut stand and particularly as a buffer area on its east boundary. Like most forests in this area the entire forest is an isolated fragment. The south and west sides are bordered by roadways and fields, the north side by a somewhat brushy field. Only the east side is protected by a forested area. The problem of isolated forests is that the effects of the surrounding environment (e.g., winds, light, temperature) extend some 30 or more feet into the stand substantially reducing the true forested area. The south boundary is threatened by expansion of Douglas Road. The eastern boundary of the forest was until 1965 an open old field. Since that time a substantial forest, largely of young elm trees, has grown up. Some portion of this forest should be retained as a buffer for the older forest area to the west.

Area 2. Forest north of the Loftus and Eck Centers.

This area follows a ridge from the northwest edge of the Loftus Center east to Ivy Road with a northward extension to Bulla Road. The western portion is a remnant of a somewhat larger forest of older white and black oaks. These extend east to a fork in the path through the woods where the larger oaks disappear having been cut some time ago. There are a few large oak stumps on the ridge indicating some cutting there as well. The older portions of this stand date to

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the early years of the University. Increment boring of white oak trees were made in 1970 by Professor W.C. Ashby of Southern Illinois University. Ashby dated individuals as originating in 1852, 53, 55, 59, 63, 64, 67, 69, 72, 76, 85, 86, 87, 92, 94, 97, 1902, 05 and 09. In the western area of the stand there was an open-grown white oak indicating that the area was earlier relatively open woodland or, perhaps, oak-opening. The white oaks originating throughout the 1800s grew into a closed forest along with the black oaks the ages of which are unknown. To judge from their sizes the black oaks are of similar ages, or perhaps, older. A sample of this stand in 1970 shows the tree and sapling composition of the stand on the ridge and south of it (now occupied by the Loftus Center).

Table 2. Tree composition of the natural area north of the Loftus Center.

Species	Tree > 4"	Saplings < 4"
Black Cherry	29	18
Black Oak	26	5
White Oak	17	1
Red Maple	8	23
Hickory	4	3
Elm	3	14
Sugar Maple	3	1
Hackberry	1	0
Flowering Dogwood	1	15
Ash	1	1

Tree density is about 150 per acre.

The older parts of the remaining stand are similar. The larger trees are white oaks 20-21 inches in diameter, black oaks 23-24 inches in diameter and one red maple 27 inches in diameter. The stand is undergoing change, the reproduction being principally red maple, black cherry and elm. These species, particularly elm and red maple, will probably dominate the stand in future decades. Sugar maple may also enter. The flowering dogwood trees in the stand add to its interest in the spring.

This stand is bordered on the south by the Loftus and Eck buildings, to the north and west by residences and buildings and on the east by residences along Ivy Road. It is limited in size and has a path running through it from east to west. It affords a colorful backdrop to the buildings on its south-west boundaries, particularly in fall.

Area 3. Forest on the west shore of St. Joseph's Lake.

This is a relatively small area (9.8 acres) located on an east-facing slope from the road to St. Joseph's Hall to the west shore of St. Joseph's Lake. The upper part is dominated by larger black and white oaks with more elm, black cherry, red maple and sycamore on the lower slope. The tree composition is as follows:

Table 3. Tree composition of the forest on the west shore of St. Joseph's Lake.

Species	Trees > 4"
Black Cherry	13
Hickory	7
Black Oak	5
White Oak	4
Red Maple	4
Elm	3
Sassafras	3
Sycamore	1
Walnut	1
Sugar Maple	1

The stand is traversed by paths leading to Stations of the Cross. There are a number of introduced trees (e.g., spruce) of fair size but essentially the stand is a remnant of old oak forest. Black oak stumps of trees cut in 1987 were about 146 and 138 years old dating the trees to 1841 and 1849, respectively. A white oak stump, in the same area, also cut in 1987, was about 151 years old dating it to 1836. Apart from its age and historical context, the stand is important for erosion control of the slope and it dominates the view of the west end of St. Joseph's Lake. A small portion of the stand extends across the road leading to Saint Mary's College adjacent to Holy Cross Hall. This provides an attractive avenue through the forest. Some of the undergrowth along the road has been cleared, presumably for purposes of security. The stand also borders the pathway leading around St. Joseph's Lake.

Area 4. A riparian belt along Juday Creek.

Juday Creek is a tributary of the St. Joseph River draining much of the northern portion of St. Joseph County. It is 12 miles long. About 3/4 mile of it, from Ironwood Road to the Indiana Toll Road, is on Notre Dame property. Most of the upper reaches of the stream are in agricultural areas, some on the farm owned by the Holy Cross Brothers east of the University. Nearer Notre Dame it is much modified by urban-residential development. Its lower reach, near its confluence with the St. Joseph River, is a natural area owned by the Isaac Walton League but much used for teaching and research by the faculty of the Biological Science Department. It is a low gradient stream flowing largely across fairly level land except near the St. Joseph River where it drops rapidly. Juday Creek has low flows ranging from 3.3 cubic feet per second (cfs) in 1977 to a high of 26.4 in 1990. Mean flow is 9.3 cfs.

Unlike the other natural areas on Notre Dame property, Juday Creek is intrinsically influenced by what happens upstream and influences what happens downstream. This is the nature of streams and Notre Dame, therefore, has a primary interest in the entire stream as it may affect that por-

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tion crossing Notre Dame property or used by its faculty and students for research and teaching. Fortunately, Dr. Ronald Hellenthal, a member of the Notre Dame Environmental Committee, is active in all facets involving the St. Joseph River and its tributaries including Juday Creek.

Notre Dame has an interest in Juday Creek in that Dr. Hellenthal and his students have made it one of the best documented streams in the United States. Two masters theses, two doctoral thesis and several publications have been produced from studies on Juday Creek in the Isaac Walton League area. From this extensive sampling a computerized data base has been developed of stream organisms, their population dynamics and the energetics of the stream community.

These studies continue and the entire program could be at risk if current and prospective developments along Juday Creek persist. Juday Creek is also regularly used by courses in General Ecology, Aquatic Ecology and advanced courses in Stream Ecology.

Juday Creek on the Notre Dame Campus is bordered by a riparian area of characteristic streamside vegetation including sedges, many other herbaceous species, shrubs such as alder, willow, and trees such as silver maple that tolerate saturated soils. This area varies in width between 10 and 50 yards on either side. The stream is principally influenced by shading and materials dropped into it by this streamside vegetation. The Notre Dame reach is a relatively undisturbed portion of the stream, at least since the University farms ceased operation.

Juday Creek is particularly significant because of its high water quality and low summer temperatures maintained by shading. It is the only stream in the area that supports a reproducing population of brown trout. Because of this and increasing general concern about wetlands Juday Creek is under surveillance by several state and federal agencies. There are at present several projects that will influence future developments on the creek and the actions of these state and federal agencies. Notre Dame can do very little on the Juday Creek without involving several of these agencies. A recent study for the St. Joseph River Basin Commission produced data showing that Juday Creek was low in inorganic and organic pollutants. For example, nitrate was less than 0.10 mg/L at the low end of a 0.1 to 9.6 mg/L range in other streams in the area. Total phosphorus was similarly low 0.03 mg/L in a range of 0.01 to 0.26 mg/L. Among polluting heavy metals in sediments it was also low as compared to the range in other streams in the St. Joseph River basin.

Table 4. Heavy metal pollution in Juday Creek compared with other streams in the area.

Metal	Juday Creek	Range
Arsenic	<10.0 mg/Kg	5-43 mg/Kg
Cadmium	5.0	3-22
Chromium	8.0	7-53
Copper	<20.0	10-343
Lead	<250.0	100-400
Mercury	<0.2	<0.2-1.5
Nickel	<20.0	<10-40
Zinc	30.0	14-769

There are several major concerns that will affect any planning for the Juday Creek on Notre Dame property. Modifications in upstream flow:

- Can increase downstream flooding.
- Can increase silt load.
- Can affect the transport and accumulation of toxicants.
- Can affect, particularly increase, water temperatures.

For example, development to decrease flooding upstream will increase it downstream. Increasing flow rates upstream will carry silt to lower reaches rather than allowing it to settle upstream. Modification of the stream may reduce low flows to an extreme level. Development of large ponds or lakes for "flood control" would increase water temperatures as would clearing along the stream. Such temperatures can be lethal to the trout population. The drainage area includes the area of Granger, site of a prolonged dispute about the influx of organic pollutants into the ground water. Modification of upstream areas could increase the concentrations of silt and pollutants in the stream on Notre Dame property which could create problems and costs of cleanup.

Notre Dame has a considerable concern with protecting its stretch of Juday Creek and incorporating it into a natural reserve that will assist in that protection.

Area 5. Forest stand north of Fischer Graduate Student Housing.

This area of about 10.6 acres is a small draw running east-west with slopes to north and south. There are a number of older black and white oaks on the west slope but most of the area is a mix of trees and shrubs suggestive of more recent disturbance. Common tree species are black cherry, black locust, red maple, box elder, mulberry. Shrubs include honeysuckle, sumac, elderberry, maple leaf viburnum and arrow-wood (also a viburnum). The stand is bordered on the west by a road and parking area, on the south by Fischer Graduate Student Housing (with a chain link fence) on the north and east by housing. The east end opens into low grassy wet glade.

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The stand will probably develop as a mixture of red maple, elm, black cherry and possibly sugar maple in future decades.

Area 6. The several islands in St. Joseph's and St. Mary's lakes.

The islands are all covered with trees and dense shrub growth. No samples or tree counts are available. Some are notable in spring for a beautiful show of redbud trees, one of the highlights of the campus vegetation.

One island in St. Joseph's Lake is connected to the mainland by a 58 inch Storm Sewer capped by a concrete causeway. Part of it has been cleared and fenced. This area serves little purpose and it will be as well if the causeway is fenced on the mainland side and the cleared area of the island allowed to revert to brush and trees.

The islands are attractive breaks in the lakes, offer good cover for birds, and are best left undisturbed.

LEVELS OF PROTECTION:

The stewardship plan is based on designation of natural areas into three levels of protection and academic use based on their overall quality and their potential for sustained use. High quality natural areas are afforded maximum protection, while others are available for use by the general public. The campus natural and undeveloped areas have been classified as follows:

CATEGORY I: Natural areas managed at the highest level of protection and lowest level of usage.

Areas 1 and 6 would be Category I areas. These areas have been identified as having the greatest natural quality. All use shall be limited to nondestructive sampling, measurement and observation. The investigator must also provide evidence that collecting or research activity will not inflict substantial or permanent damage to the natural area of the species under study. Methods of collection and collecting areas within the natural area must be clearly defined and adhered to. Class projects in Category I natural areas shall be limited to observation and nondestructive sampling only, and from established trails, where available.

CATEGORY II: High quality undeveloped areas; only limited impact allowed for research, teaching and nature study.

Areas 2 and 4 would be classified Category II. These areas have significant natural attributes and provide opportunities for teaching and scientific study. Limited impact sampling, measurement and observation is allowed where ap-

propriate. Scientific and class collecting shall be limited to species where need has been demonstrated. Collecting must not damage the population or environment of the species to be collected, nor other species associated with it.

CATEGORY III: Undeveloped areas of the campus open to the public for viewing and restricted general public use.

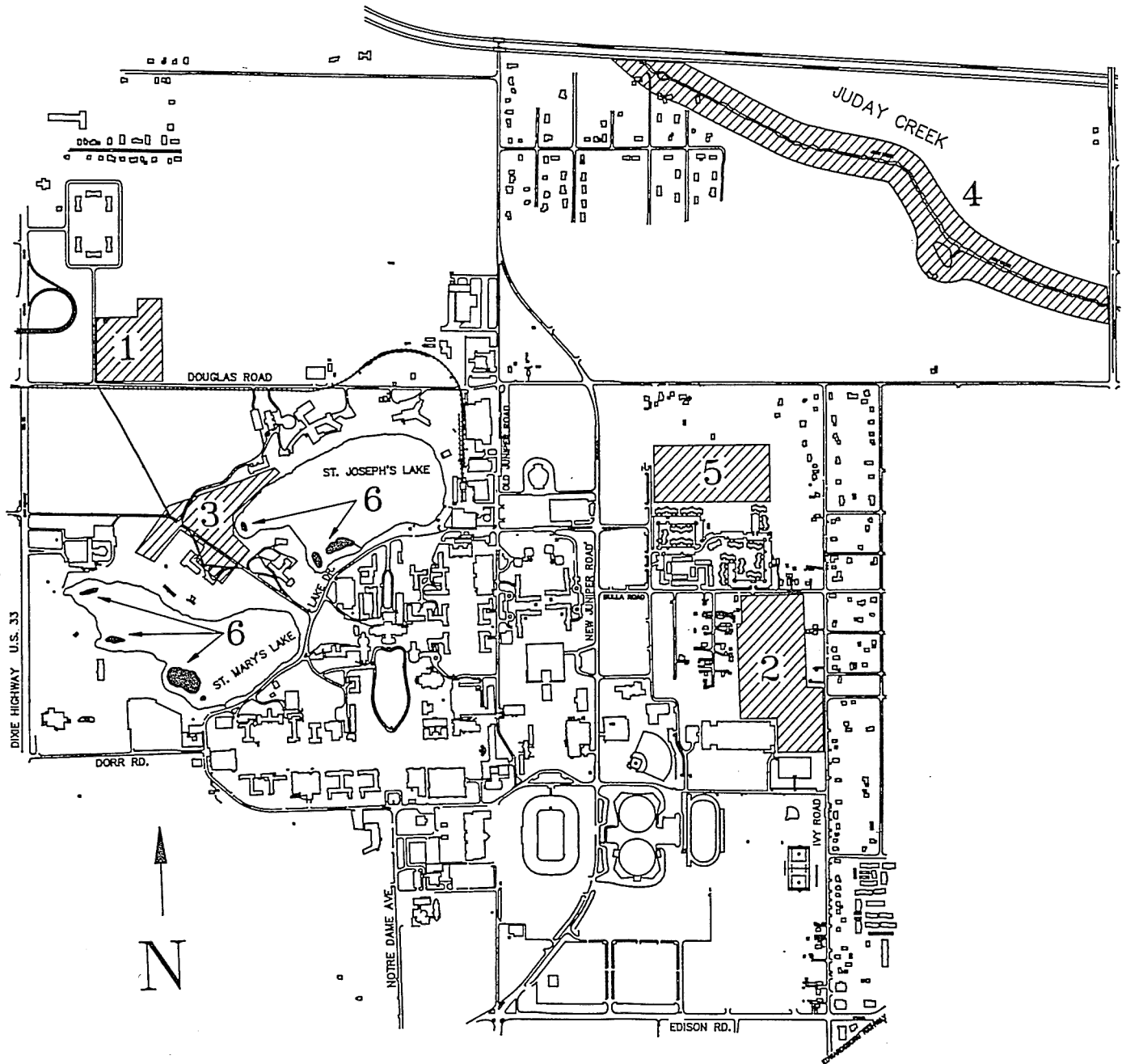
Area 3 and 5 are classified Category III. The area is for enjoyment of the natural scene even though strictly natural conditions did not always prevail in the past. It is for looking, listening, studying, contemplating and photographing.

LAND STEWARDSHIP ENDOWMENTS:

The Natural Area Committee would encourage the endowment of activities that encourage generation of financial resources to create, restore and maintain the campus' historic vegetation, new landscapes and natural areas. We understand a program called the Notre Dame Conservancy is being created for the above purpose. We fully support its program.

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University of Notre Dame Natural Areas



1. Forest on Douglas Road near University Village
2. Forest north of Loftus and Eck Centers
3. Forest on west shore of St. Joseph Lake
4. Riparian Belt along Juday Creek
5. Forest north of Fischer Graduate Housing
6. Islands in St. Joseph's and St. Mary's Lakes

The Graduate School Research Division

Current Publications and Other Scholarly Works

Current publications should be mailed to the Research Division of the Graduate School, Room 312, Main Building.

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S. Ronco, M. Perkovic, G.J. Ferraudi and M. Cozzi. 1992. Magnetic Field Perturbation of the Doublet States in Cr(III) Complexes with Quadratic and Cubic Symmetries. A Study on the Role of Levels Having $^2T_{1g}$ Parentage. *Chemical Physics* 62:95-106.

The Graduate School Research Division

Summary of Awards Received and Proposals Submitted

In the period May 1, 1992, through May 31, 1992

AWARDS RECEIVED

Category	Renewal		New		Total	
	No.	Amount	No.	Amount	No.	Amount
Research	7	381,003	8	127,632	15	508,635
Facilities and Equipment	0	0	1	25,000	1	25,000
Instructional Programs	0	0	1	44,195	1	44,195
Service Programs	0	0	5	7,282	5	7,282
Other Programs	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	7	381,003	15	204,109	22	585,112

PROPOSALS SUBMITTED

Category	Renewal		New		Total	
	No.	Amount	No.	Amount	No.	Amount
Research	4	264,280	20	3,277,693	24	3,541,973
Facilities and Equipment	0	0	0	0	0	0
Instructional Programs	0	0	5	4,919,896	5	4,919,896
Service Programs	0	0	0	0	0	0
Other Programs	<u>0</u>	<u>0</u>	<u>1</u>	<u>143,997</u>	<u>1</u>	<u>143,997</u>
Total	4	264,280	26	8,341,586	30	8,605,866

The Graduate School Research Division

Awards Received

In the period May 1, 1992, through May 31, 1992

AWARDS FOR RESEARCH

Aerospace and Mechanical Engineering

Nee, V., Yang, K.

Air-Cooled Heat Sink Study

International Business Machines
\$25,000 16 months

Breathing Cooling Technology

International Business Machines
\$25,000 12 months

Huang, N.

Flow Field Modelling of Oil Formation

Shell Development Co.
\$12,499 6 months

Civil Engineering and Geological Sciences

Gray, K., Irvine, R.

Radiolytic Destruction of Organics

Oxychem Technology Center
\$63,000 73 months

Chemistry and Biochemistry

Miller, M.

Asymmetric Synthesis of Antiviral and Antifungal Agents

Miles, Inc.
\$32,953 12 months

Basu, S.

Biochemistry Studies with Human Colon Tumor Cell

United Health Services
\$7,500 12 months

Action of Cis-Platin DNA Synthesis

Coleman Foundation
\$10,000 12 months

Thomas, J.

Pulse Radiolysis of Monomers-Prepolymer Systems

Corp. Research Lab./3M
\$38,503 12 months

Castellino, F.

Glycan Assembly on Human Plasminogen

American Heart Association-Ind.
\$10,000 12 months

Mathematics

Hahn, A.

Coset Lattices

National Security Agency
\$4,000 12 months

Rosenthal, J.

Systems Theory, Transfer Functions and Geometry

National Science Foundation
\$30,000 24 months

Physics

Marshalek, E.

Theoretical Studies in Nuclear Structure

Department of Energy
\$52,000 12 months

Johnson, W., Sapirstein, J.

Weak Interactions in Atomic Physics

National Science Foundation
\$170,000 12 months

Cushing, J.

"Copenhagen" Hegemony

National Science Foundation
\$10,000 6 months

Theology

Ulrich, E.

Volume Three of the Biblical Qumran (Dead Sea) Scrolls

Oxford Centre for Hebrew Studies
\$18,810 24 months

AWARDS FOR FACILITIES AND EQUIPMENT

Electrical Engineering

Das, B.

Surplus Equipment Donation Agreement

Intel Corp.
\$25,000 12 months

AWARDS FOR INSTRUCTIONAL PROGRAMS

Civil Engineering and Geological Sciences

Gray, W.

REU Site in CE/GS at the University of Notre Dame

National Science Foundation
\$44,195 6 months

AWARDS FOR SERVICE PROGRAMS

Notre Dame Center for Pastoral Liturgy

Bernstein, E.

Center for Pastoral Liturgy

Various Others
\$470 1 month

Center for Pastoral Liturgy — Publications

Various Others
\$233 1 month

The Graduate School Research Division

Center for Continuing Formation in Ministry

Cannon, K.
Center for Continuing Formation in Ministry
Various Others
\$5,686 1 month

Institute for Pastoral and Social Ministry

Cannon, K.
I.P.S.M./Dynamic Parish
Various Others
\$83 1 month

Latin/North American Church Concerns

Cannon, K.
I.P.S.M./LANACC
Various Others
\$810 1 month

Proposals Submitted

In the period May 1, 1992, through May 31, 1992

PROPOSALS FOR RESEARCH

Aerospace and Mechanical Engineering

Nelson, R.
Static and Dynamic Characteristics
NASA - Ames Research Center
\$49,500 12 months

Biological Sciences

Lamberti, G., Berg, M.
Stream Benthic Responses to Fish Spawning
National Science Foundation
\$259,548 36 months

Lamberti, G.
Monitoring Zebra Mussel at Indiana Dunes
National Parks Service
\$3,459 12 months

Civil Engineering and Geological Sciences

Gray, W.
Hysteresis and the Physics of Unsaturated Flow
National Science Foundation
\$230,379 24 months
Investigation of Elastic Interface Waves Along a Fracture
National Science Foundation
\$237,023 36 months

Kareem, A., Westerink, J.

Impact of Mean Sea Level Rise on Coastal Inundation
National Science Foundation
\$309,701 36 months

Neal, C.

Stratigraphic and Geochemical Study of Ontong Java Plateau
National Science Foundation
\$62,223 24 months

Origin of the Caribbean Plate
National Science Foundation
\$58,598 24 months

Rigby, J.

Stratigraphy of the Hell Creek and Ft. Union Formations
National Science Foundation
\$142,325 24 months

Kareem, A.

Coastal Construction in Tropical Storm/Climate Change
National Science Foundation
\$226,853 36 months

Gray, K.

NSF Presidential Young Investigator
National Science Foundation
\$85,242 12 months

Halfman, J.

Holocene High-Resolution Paleoclimatology Kenya
National Oceanic & Atmospheric Administration
\$203,957 24 months

Chemical Engineering

Brennecke, J.

Presidential Young Investigator Award
National Science Foundation
\$88,815 12 months
REU Supplement to NSF CTS-9009562
National Science Foundation
\$2,640 3 months

Chang, H.

REU Supplement to NSF CTS-91-12977
National Science Foundation
\$2,640 3 months

Electrical Engineering

Alcock, C.

New Materials for Solid Oxide Fuel Cells
Argonne National Lab.
\$6,000 3 months
Study for a Thermochemical Database for the Elements
National Institute of Standards & Technology
\$18,499 3 months
On-Line Sensor Development for IFR
Argonne National Lab.
\$10,016 3 months

The Graduate School Research Division

English

Ziarek, K.
Transatlantic Connections
National Endowment for the Humanities
\$44,550 9 months

Government and International Studies

Arnold, P.
Between Tradition and Modernity in the American
Executive
National Endowment for the Humanities
\$44,550 10 months

Physics

Ruggiero, S., Trozzolo, A.
Superconducting Properties of Organic Complexes
Department of the Air Force
\$200,000 12 months

Blackstead, H.
Pump-Probe Spectroscopy of High Temperature
Superconductors
National Science Foundation
\$405,389 36
Ruchti, R., Biswas, N., et al.
High Rate Scintillating Fiber Tracking for SSC
Purdue University
\$71,724 12 months

South Bend Center for Medical Education

McKee, E.
Regulation of Mitochondrial Protein Synthesis
I.U. School of Medicine
\$778,342 60 months

PROPOSALS FOR INSTRUCTIONAL PROGRAMS

Biological Sciences

Duman, J., Hyde, D., et al.
Graduate Research Traineeship Program
National Science Foundation
\$2,512,298 60 months

Civil Engineering and Geological Sciences

Gray, W.
Graduate Research Traineeship Program in CE/GEOS
National Science Foundation
\$1,145,000 60 months

Computer Science and Engineering

Bass, S., Cohn, D., et al.
Ph.D. Traineeships Within a New Computing Program
National Science Foundation
\$916,000 60 months

Electrical Engineering

Minniti, R., Das, B., et al.
Solid State for Talented High School Students
National Science Foundation
\$182,814 24 months

O.S.I.P.A.

Borelli, M.
Notre Dame Science/Engineering for Talented Seniors
National Science Foundation
\$163,784 24 months

PROPOSALS FOR OTHER PROGRAMS

English

Buttigieg, J.
Antonio Gramsci's Prison Notebooks
National Endowment for the Humanities
\$143,997 30 months

Notre Dame

R E P O R T

Volume 21, Number 19

July 10, 1992

Notre Dame Report (USPS 7070-8000) is an official publication published fortnightly during the school year, monthly in the summer, by the University of Notre Dame, Office of the Provost. Second-class postage paid at Notre Dame, Indiana.
Postmaster: Please send address corrections to: Records Clerk, Department of Human Resources, Brownson Hall, University of Notre Dame, Notre Dame, IN 46556.

Linda M. Diltz, Editor
Marten Schalm, Designer
Willa Murphy, Layout
Publications and Graphic Services
415 Main Building
Notre Dame, IN 46556
(219) 239-5337

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