

THE RECORD

A DOCUMENTARY RECORD OF FACTS AND FIGURES FOR THE DEPARTMENT OF PHYSICS & ASTRONOMY

UNIVERSITY OF NEBRASKA-LINCOLN

ROGER D. KIRBY, EDITOR

2003–2004 Degree Recipients

Bachelor of Science

- **Melissa Lise Downs brough** (May 2004) is in the M.D./Ph.D. program at Jefferson Medical college in Philadelphia.
- **Andrea Lynn Fuchser** (Dec. 2003) is attending graduate school in medical physics at Vanderbilt.
- **Samuel Aaron Heider** (May 2004) is in the Army ROTC.
- **Jonathan Patrick Kayl** (Dec. 2003) is a signal officer in the Army based at Fort Hood, TX.
- **Andrew Michael Kubik** (Dec. 2003) is attending graduate school in physics at Northwestern.
- **Nathan Lawrence Loose** (Dec. 2003) is thought to be serving in the Army Aviation Corp based in Fort Rucker, AL.
- **Bradley Wayne Peterson** (May 2004) is attending graduate school in astrophysics at Iowa State University.
- **Hagen Dean Schafer** (May 2004) is currently job hunting.

Master of Science

- **Jonathan William Bullis** (May 2004) is a scientist in the Radiological Controls Engineering Department at the Naval Reactor Facility in Idaho Falls, ID.
- **Anthony Nicholas Caruso** (Dec. 2003) entered the physics graduate program at UNL working with Professor Peter Dowben.
- **Elizabeth S. Klimek** (Aug. 2003) entered the astronomy graduate program at UNL working with Professor C. Martin Gaskell.
- **Kristin Leigh Kraemer** (May 2004) entered the physics graduate program at UNL working with Professor Steven Ducharme.
- **Victoria Mariupolskaya** (Aug. 2003) entered the physics graduate program at the University of Texas–Austin.
- **Zhen Qin** (Dec. 2003) entered the M.S. program in Actuarial Science at UNL.

Doctor of Philosophy

- **Jaeil Bai** (May, 2004) did postdoctoral research with Professor X.C. Zeng in the Chemistry Department at UNL.
- **Tikhon Victorovich Bykov** (Aug. 2003) is an Assistant Professor at McMurry University in Abilene, Texas.
- **Adam Stearns Green** (Aug. 2003) is a professor of physics at the University of St. Thomas in St. Paul, MN. [asgreen@stthomas.edu]
- **Hae-Kyung Jeong** (Aug. 2003) did postdoctoral research at the National Synchrotron Light Source at Brookhaven National Lab working for Kevin Smith, Physics Department, Boston University. [hjeong@bu.edu]
- **Amiran Amiranovich Khuskivadze** (May 2004). Degree awarded posthumously; see *Spectrum* Issue No. 23, Fall 2004.
- **Thomas Thaden-Koch** (Dec. 2003) is working in the School of Physics & Astronomy at the University of Minnesota and is a part of the Physics Education Research and Development group.
- **Cheol-Soo Yang** (May 2004) is a postdoctoral research associate at the University of Massachusetts - Amherst in M. Tuominen's group.

2004–2005 Degree Recipients

Bachelor of Science

- **Andrew (A.J.) Benker** (May 2005) entered the graduate astronomy program at the University of California, Irvine.
- **Mary K. Schmitter (Everett)** (Dec. 2004) entered the physics graduate program at SUNY Buffalo with an interest in medical physics.
- **Rebecca A. Harbison** (May 2005 with High Distinction) entered the graduate astronomy program at Cornell University.
- **Raymond P. Lemoine** (May 2005) entered the graduate physics program at UNL.
- **Adam M. Scheer** (May 2005) entered the physics graduate program at UNL working with Paul Burrow (See profile on page 16 of *Spectrum*).
- **Rodrigo Segura** (May 2005) entered the physics graduate program at Purdue.
- **Vernon L. Volpe, Jr.** (May 2005) entered the physics Ph.D. program at the University of Colorado–Boulder.

Master of Science

- **Brett E. Barwick** (Aug. 2004) is in the physics Ph.D. program at UNL working with Professor Herman Batelaan.
- **Danqin Feng** (Dec. 2004) is in the physics Ph.D. program at UNL working with Professor Peter Dowben.
- **Stephen J. Friedman** (Aug. 2004) is working for Future Foam Inc. in Council Bluffs, Iowa as a systems engineer.
- **Glen E. Gronniger** (Aug. 2004) is in the physics Ph.D. program at UNL working with Professor Herman Batelaan.
- **Prakash R. Poudel** (Aug. 2004) is in the physics Ph.D. program at the University of North Texas in Denton.
- **Yushun Lin** (May 2005) is in the physics Ph.D. program at UNL working with Professor Sy-Hwang Liou.
- **Rui Zhang** (May 2005) is in the physics Ph.D. program at UNL working with Professor Sy-Hwang Liou.

Doctor of Philosophy

- **Aliekber Aktag** (Aug. 2004) is teaching at the Abant Izzet Baysal University in Turkey.
- **Anthony N. Caruso** (Dec. 2004) is a research scientist in the Center for Nanoscale Science and Engineering at North Dakota State University.
- **Lan Gao** (Dec. 2004) is a postdoctoral research associate at UNL.

2003–2004 Fellowships and Traineeships

Summer Graduate Research Fellowships

John D. Burton

*Donald F. and Mildred Topp
Othmer Graduate Fellowships*

**John D. Burton
Carolina Ilie**

Degering Fellowship
Amiran Khuskivadze

Chancellor's Fellowship
Jack W. Maseberg

Larson Fellowship
Jonathan Reyes

2004–2005 Fellowships and Traineeships

*Donald F. and Mildred Topp
Othmer Graduate Fellowships*

**John D. Burton
Carolina Ilie
Kristin Kraemer**

Chancellor's Fellowship
Jack W. Maseberg

Larson Fellowship
Jonathan Reyes

Bucky Fellowship
Anthony N. Caruso

Borrison Fellowship
Andrei Istomin

2003–2004 Scholarships

Stowell Fund Scholarships

Charles Beer	Andrew Benker
Christopher Corder	Paul Demmel
Mary K. Everett	Amanda Fricke
Alicia Gilmore	Jeremiah Grell
Ceceilia Hedrick	Colin Narans
Levi Neukirch	Matthew Pewthers
Gary Pike	Adam Scheer
Royce Sheibal	Masatoshi Shoji
John-Paul Wilson	

Henry H. Marvin Scholarships

Stephanie Gilbert	Rebecca A. Harbison
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U.S. Harkson Scholarships

Andrea L. Fuchser	Stephanie Gilbert
Rebecca A. Harbison	Lisa Harlow
Ceceilia Hedrick	Jason Keller
Andrew Kubik	

John E. Almy Scholarships

Mary K. Everett	Alicia Gilmore
John-Paul Wilson	

Physics & Astronomy Alumni Scholarships

Charles Beer	Christopher Corder
Amanda Fricke	Colin Narans

Banti & Mela Ram Jaswal Scholarships

Paul Demmel	Masatoshi Shoji
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Joel Stebbins Fund Scholarships

Jeremiah Grell	Matthew Pewthers
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Henry H. Marvin Scholarship

Lisa Harlow

Hirsch Scholarship Fund

Scott Kratochvil	Levi Neukirch
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Kurt Meyer Physics Scholarship

Royce Sheibal

2004–2005 Scholarships

Stowell Fund Scholarships

Charles Beer	Andrew Benker
Laurel Burk	Nathan Chandler-Smith
Christopher Corder	Mary K. Everett
Martin Frenzel	Stephanie Gilbert
Alicia Gilmore	Dmitry Kolesnikov
Ryo Namba	Levi Neukirch
Timothy Scarborough	Adam Scheer
Masatoshi Shoji	Daniel Williams
John Paul Wilson	

Henry H. Marvin Scholarships

Rebecca Harbison	Ceceilia Hedrick
Jason Keller	

U.S. Harkson Scholarships

Martin Frenzel	Rebecca Harbison
Lisa Harlow	Ceceilia Hedrick
Jason Keller	

John E. Almy Scholarships

Amanda Fricke	Masatoshi Shoji
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Physics & Astronomy Alumni Scholarships

Austin Bontrager	Kyle Scheele
Lauren Thacker-Lynn	

Banti & Mela Ram Jaswal Scholarships

Austin Bontrager	Kyle Scheele
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Joel Stebbins Fund Scholarships

Andrew Benker	Lauren Thacker-Lynn
Daniel Williams	

Katkanant Scholarship

Laurel Burk

Kurt Meyer Physics Scholarship

Amanda Fricke

R.M., S.M., and A.M. Eddy Scholarship

Christopher Corder

2003–2004 Honors

Outstanding Student Paper at AVS Meeting
Cheol-Soo Yang

College of Arts & Sciences Graduate Research Assistant Award and Graduate Studies Graduate Research Award
Jaeil Bai

Outstanding Student Service on a Search Committee
Christina Marie Othon

Sigma Xi Outstanding Graduate Student Awards
Hae-Kyung Jeong
Cheol-Soo Yang

Promotions to Rank of Associate Professor with Tenure
Herman Batelaan
Bernard Doudin

Sigma Xi Outstanding Young Scientist Award
Bernard Doudin

Sigma Xi Outstanding Support of Research Award
Shelli S. Krupicka

UNL Parents Association and Teaching Council Awards
Kevin Lee
Paul D. Burrow
C. Edward Jones
Carl Lundstedt

Promotions to Emeritus Professor
Paul D. Burrow
William B. Campbell
Robert G. Fuller
Sitaram S. Jaswal

2003 Distinguished Graduate Teaching Assistant Award
Andrew Baruth

2003 Distinguished Undergraduate Teaching Assistant Award
Alison A. Buescher

2003-2004 Society of Physics Students Officers
Mary K. Everett, President
Joshua Machacek, Vice President
Raymond P. Lemoine, Social Secretary
Adam Scheer, Secretary/Treasurer

2004–2005 Honors

Promotion to Rank of Full Professor with Tenure

Evgeny Tsymbal

UNL Parents Association and Teaching Council Awards

Timothy Gay

Kevin Lee

Elected to Fellowship in American Physical Society

Peter A. Dowben

Gregory Snow

Outstanding Research and Creativity Award (ORCA)

Anthony F. Starace

Elected to Fellowship in the Institute of Physics (U.K.)

Peter A. Dowben

Distinguished Graduate Teaching Assistant Award

Thomas A. George

2004-2005 Society of Physics Students Officers

Joshua Machacek, President

Raymond Lemoine, Vice President

Shaina Remboldt, Social Secretary

Adam Scheer, Secretary/Treasurer

2003 Fall Semester Colloquia

August 28

Paul Kwiat, University of Illinois at Urbana-Champaign

*"Entangled Photons for Quantum Information:
101 Uses for a Schrödinger Cat"*

September 11

Harald Ade, North Carolina State University

"NEXAFS Microscopy of Polymers: Past, Present, and Future"

September 18

Vitaly Kresin, University of Southern California

"Electrons and Excitations in Metal Nanoclusters"

October 2

Peter Dowben, University of Nebraska-Lincoln

*"The History and Current Progress in the Development of Boron Carbide
Solid State Neutron Detectors"*

October 10

Gerhard G. Paulus, Texas A&M University

"Quantum Optics with Single Optical Cycles"

October 24

David Hafemeister, California Polytechnic State University

"Basic Climate Change Calculations"

November 6

Stephen Ducharme, University of Nebraska-Lincoln

"Ferroelectricity at the Short End of the Nanoscale"

November 13

**Yongfeng Lu, Department of Electrical Engineering,
University of Nebraska-Lincoln**

"Nanoscale Laser Materials Processing and Characterization"

November 18

**Olga Smirnova, Photonics Institute,
Vienna Technical University**

"Theoretical Aspects of Time-Resolved Auger Measurements"

November 20

Fiona Goodchild, California NanoSystems Institute

"Communicating Science for Broader Impact"

December 4

Angela Bellavance, University of Nebraska-Lincoln

*"RunII Physics Results and Prospects from the DZERO Experiment
at Fermilab"*

2004 Spring Colloquia

January 15

Richard A Edelson, University of California, Los Angeles

*"X-Ray Variability Time Scales and Masses of Extragalactic
and Galactic Black Holes"*

January 22

Jian Shen, Oak Ridge National Laboratory

*"Coupling and Phase Transitions in Surface-Supported
Magnetic Nanostructures"*

February 12

Michael Allan, University of Fribourg

"Near-Threshold Phenomena in Electron-Molecule Scattering"

March 5

Art Ellis, National Science Foundation

"The ABCs of Nanotechnology: Atoms, Bits, and Civilization"

March 9

Michael Chapman, Georgia Institute of Technology

*"All-Optical Bose-Einstein Condensation and Other Quantum Tools for
Ultracold Atoms"*

March 11

David McIlroy, University of Idaho

"Nanosprings, the Next Piece of the Nanotechnology Puzzle?"

March 25

Robert Kehoe, Michigan State University

*"Studying Truth: Measurement of Top Quark Production and Mass at the
Energy Frontier"*

March 30

Aaron Dominguez, Lawrence Berkeley National Laboratory

*"Prospects for Discovery of Neutral Higgs Bosons in Fermilab Tevatron
Run II Data"*

April 1

Andre S. Turcot, Brookhaven National Laboratory

"The Higgs Boson"

April 5

Donald Umstadter, University of Michigan

"Relativistic Optics with High-Intensity Lasers"

April 8

Steve K. Lamoreaux, Los Alamos National Laboratory

"The Casimir Force and Its Experimental Demonstration"

April 13

Soon Ming Wang, University of Florida

"Hunting for Massive Spin-0 Particles at Proton Colliders"

April 29

Seamus Curran, New Mexico State University

*"Spectroscopic Analysis of Defects Formed on Carbon Nanotubes and
Subsequent Self-Assembly"*

2004 Fall Semester Colloquia

September 9

Gordon Thompson, Rutgers University

"Ultra High Energy Cosmic Rays and the HiRes Experiment"

September 16

Ed Prather, University of Arizona

"Beyond Declarative Knowledge—Are You Really Teaching If No One Is Learning?"

September 23

Sergei Shandarin, University of Kansas

"Accelerating Universe and Its Structure"

September 30

David Keavney, Advanced Photon Source

"The Local Mn Environment and Induced Magnetic Moments in Mn-doped II-V Semiconductors"

October 12

Leo Y. Cheng, NASA/Jet Propulsion Laboratory

"Planning a Trip to Saturn: An Insider's View of the Cassini-Huygens Mission"

October 14

Mark Kasevich, Stanford University

"Precision Force Sensors Based on Atom Interferometry"

October 21

Anatoly Gitelson, Center for Advanced Land Management Information Technologies, School of Natural Resources, UNL

"Remote Sensing of Terrestrial and Aquatic Environments"

November 18

Paul D. Burrow, Department of Physics & Astronomy, University of Nebraska-Lincoln

"Resonances and Bond-Breaking in Bio-molecules"

December 2

Evgeny Y. Tsymbal, Department of Physics & Astronomy, University of Nebraska-Lincoln

"Effect of Interface Bonding on Spin Dependent Tunneling"

December 9

Bernd Rellinghaus, Institute for Metallic Materials, Dresden, Germany

"Nanoparticles from the Gas Phase: Potentials and Challenges of a Novel Class of Magnetic Materials"

2005 Spring Colloquia

January 20

Carl Patton, Colorado State University

"Microwave Envelope Solitons in Magnetic Thin Films"

January 27

Igor Mazin, Naval Research Laboratory

"Measuring Spin Polarization by Andreev Reflection: A Theoretical Basis"

February 17

Alex Cronin, University of Arizona

"Decoherence and Dephasing in Atom Interferometry"

February 28

Kirill Belashchenko, University of Nebraska-Lincoln

"Multiscale Modeling of Magnetic Systems"

March 4

**Oleg Mryasov, Seagate Technology/
Seagate Research Center**

"Magnetic Alloy Nano-Structures: Interactions and Properties"

March 7

Carsten Timm, Free University Berlin

"Transport Through Single Molecules"

March 10

Igor Zutic, Center for Computational Materials Science, Naval Research Laboratory

"Spin-Polarized Transport in Semiconductors: Lessons From Superconductivity"

March 14

Robin Santra, Institute for Theoretical Atomic and Molecular Physics (ITAMP), Harvard-Smithsonian Center for Astrophysics

"Clusters in XUV Radiation Fields"

March 16

Ali Alnaser, James R. Macdonald Laboratory, Kansas State University

"Momentum Imaging of Ultra-Fast Dynamics in Strong Field Ionization of Atoms and Molecules"

March 21

Jianping Zhou, Spectra-Physics Corp.

"Ultrashort Pulse Generation, Stabilization, and Its Applications"

March 24

Boris Blinov, Physics Department, University of Michigan

"Quantum Computing with Entangled Atoms and Photons"

March 29

Igor Kaganovich, Princeton Plasma Physics Laboratory

"Heavy Ion Driven Inertial Fusion Research"

April 7

Carlos Gutierrez, Texas State University

"Radical Assist – Ion Beam Sputtering (RA-IBS): An Alternative Strategy for Artificially Engineering Layered Structures"

April 14

Nick Schneider, Laboratory for Atmospheric & Space Physics, University of Colorado

"Jupiter's Magnetosphere: A Volcano-Powered Nebula"

April 21

Robin Ciardullo, Penn State University

"101 Uses of Extragalactic Planetary Nebulae"

April 28

Mikko Voutilainen, University of Nebraska & Helsinki University of Technology

"Production of High Energy Jets at the DZERO Experiment at Fermilab"

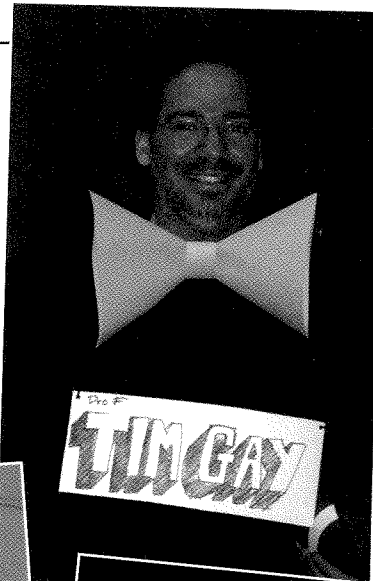
2003–2005 Faculty Professional Activities

In addition to service on Department, College and University-wide committees, during 2003-2005 a number of the faculty were active in local, national, and international professional activities, as follows:

- **Shireen Adenwalla:** Member, Instrument Advisory Board, Spallation Neutron Source (SNS), Oak Ridge, TN.
- **Clifford L. Bettis:** Past President, The Physics Instructional Resource Association (PIRA); Member, PIRA Demonstration Classification Committee.
- **Kenneth A. Bloom:** Member, Executive Committee, Fermilab Users Organization.
- **Daniel R. Claes:** Illustrator, “Understanding the Universe: From Quarks to the Cosmos,” Don Lincoln, World Scientific Publishing Co. (2004), Scientific American Book of the Month Club, January 2005 selection.
- **Aaron Dominguez:** Co-chair, Higgs Working Group of the TeV4LHC Workshop – an international, year-long workshop on bridging the physics of the Tevatron and the LHC.
- **Peter A. Dowben:** Chair, Users Committee and Chair, VUV Scheduling Committee, Center for Advanced Microdevices (CAMD), Louisiana State University, Baton Rouge, LA; Member, Editorial Board, *Journal of Physics: Condensed Matter*.
- **Ilya I. Fabrikant:** Member, Local Organizing Committee, 2005 DAMOP Annual Meeting; Session Organizer, 2005 DAMOP Annual Meeting; Scientific Committee Member, IV Conference on Low-Energy Electron-Molecule Interactions (2005, Smolenice, Slovakia)
- **C. Martin Gaskell:** Chair, Scientific Organizing Committee, “Variability of Active Galactic Nuclei from X-Rays to Radio”; Member, Board of Hyde Observatory, Lincoln, NE; Member, City of Lincoln Outdoor Lighting Task Force.
- **Timothy J. Gay:** Elected Vice-Chair of the Division of Atomic, Molecular, and Optical Physics (DAMOP) of the APS; Chair of the Fellowship Committee of DAMOP, 2004-2005; Co-Chair of the Local Committee for the 2005 DAMOP Annual Meeting; General Committee of the International Conference on the Physics of Electronic, Atomic, and Photonic Collisions (2001-2007); International Scientific Advisory Board of the International Conference on Coherence and Correlations in Atomic Collisions (2004-2005).
- **Roger D. Kirby:** Chair, Academic Program review team for the Department of Physics and Astronomy and The Bartol Institute at the University of Delaware.
- **Diandra L. Leslie-Pelecky:** APS/GMAG (Topical Group on Magnetism) Nominating Committee, Program Chair, Minisymposium on Biomedical Applications of Nanomagnetic Materials (Lincoln, NE), Secretary, Steering Committee, for 2004 Magnetism and Magnetic Materials Conference (Jacksonville, FL); Member, Panel on Assessment of the Impact of NSF MRSEC Program for the National Research Council; Member, Program Committee of the MMM/Intermag Conference; Organizer, NSF Broader Impacts Toolbox Workshop; Member, Editorial Board of IEEE Transactions on Magnetics; Nominating Committee, APS Topical Group on Magnetism; Secretary, Steering Committee for the 2004 Magnetism and Magnetic Materials Conference; Program Chair, Mini-Symposium on Biomedical Applications of Nanomagnetic Materials.
- **Kam-Ching Leung:** Hong Kong Astrophysical Society Vice President, 1998-present; Co-Chair of Scientific Organizing Committee Pacific Rim Conference on Stellar Astrophysics, Korea, November 1-5, 2005; Chinese Academy of Sciences, Shaanxi Astronomical Observatory, Distinguished Professor, 1990-present; Peking University, China, Guest Professor, 1996-present; Chinese Academy of Sciences, Beijing Astronomical Observatory, Guest Professor 1997-present; Hong Kong Space Museum, Science Advisor 2000-present; Chiang Mai University, Thailand, Guest Professor 2002-present.
- **Sy-Hwang Liou:** Guest Scientist, NIST, Boulder, CO; Adjunct Professor, National Cheng Kung University, Tainan City, Taiwan.
- **David J. Sellmyer:** Honorary Member, Academic Committee, State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences; Member, Nebraska State EPSCoR Committee & EPSCoR Grants Committee.
- **Gregory R. Snow:** Member, Education and Outreach Committee of the Division of Particles and Fields (DPF) of the American Physical Society (Spring 2003-present); U.S. Representative to the European Particle Physics Outreach Group; Member, Fermilab Board of Overseers.
- **Anthony F. Starace:** Associate Editor, *Reviews of Modern Physics* (2003-2006); President (2003-2004), Past President (2004-2005) University of Nebraska-Lincoln, Chapter of Sigma Xi; Member, Scientific Advisory Committee, Advanced Light Source, Lawrence Berkeley National Laboratory, 2001-2005, Member, Nebraska EPSCoR State Committee, 2004-; International Advisory Committee, International Symposium on (e, 2e), Coupled Photoionization, and related topics, Buenos Aires, Argentina, 28-30 July 2005; Program Committee, 10th International Conference on Multiphoton Processes, Oxford, Quebec, Canada, October 2005; Program Committee, APS DAMOP Meeting, Lincoln, NE, 17-21 May 2005; Local Committee Co-Chair, APS DAMOP Meeting, Lincoln, NE, 17-21 May 2005.
- **Evgeny Y. Tsybal:** Organizer of the Focus Session, “Theory and Simulation of Magnetism and Spin Dependent Properties” at the 2005 APS March Meeting; Member, International Advisory Committee for the 4th International Symposium on Metallic Multilayers, Boulder, CO, June 2004; Member, International Advisory Committee, Moscow International Symposium on Magnetism (2005); Chair, Spin Transport Session, 50th Magnetism and Magnetic Materials Conference (2005).
- **Donald P. Umstadter:** Technical Committee Member, Joint Conference on Ultrafast Optics V and Applications of High Field and Short Wavelength Sources (2005, Nara, Japan); Technical Committee Member, High Field Physics, IQEC and CLEO. ∞

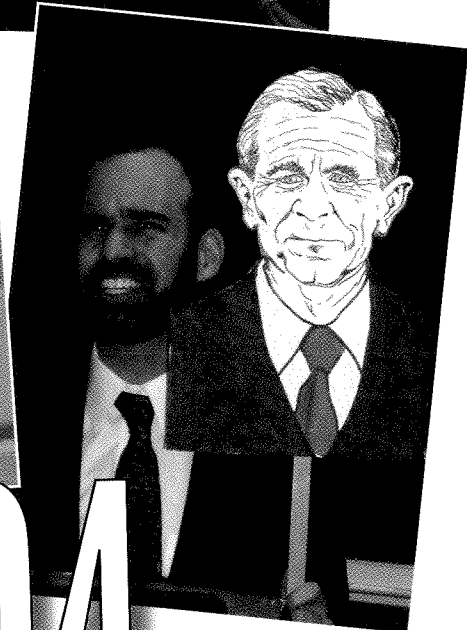
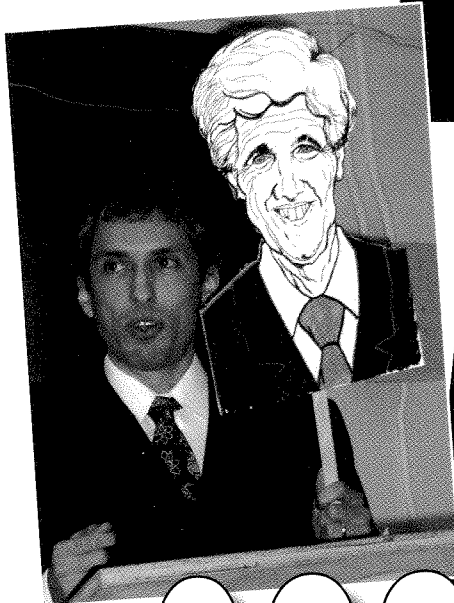
The Drama of Physics

Editor's Note: In an effort to liven up our annual end-of-semester party in December, Assistant Professor Ken Bloom suggested having faculty and graduate students each present 20 minute skits. The skits dealt with the 2004 Presidential elections, the "Tommy Lee Goes to College" NBC TV show filmed at UNL, the 2005 Einstein Centennial, the Survivor reality TV show, and other themes used both to entertain and to parody Department faculty, staff, and students. The enthusiastic response to both the 2004 and 2005 faculty and student efforts makes it likely that this entertainment will become a Department tradition. ∞



LEFT: Tim Gay (James Strohaber), a member of the experimentalist team, in the mock "Funding Survivor" reality TV show. BELOW: President Bush (Ken Bloom) in the 2004 Presidential Debate.

RIGHT: John Kerry (Aaron Dominguez) in the 2004 Presidential Debate.



2004

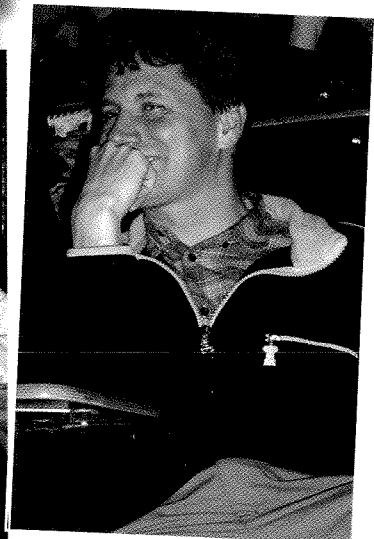


ABOVE: S. Sitaram Jaswal (Shawn Hilbert), a member of the theorist team, in the mock "Funding Survivor" reality TV show.

IMMEDIATE RIGHT: Tommy Lee (Anthony Starace) looking for his UNL chemistry class.

CENTER RIGHT: A Ten-Time Nobel Prize Loser (Norman Simon) ranting over his career frustrations.

FAR RIGHT: Herman Batelaan (Props and Make-Up) enjoying the skits.





ABOVE: **Greg Snow** (violin), and **Norman Simon**, **Martin Gaskell**, and **Ken Bloom** (as faculty sleuths) singing "The Homework Song."

RIGHT: Foreground: The Wicked Witch of the West (**Shannon Fritz**), one of the oral examiners, in the game show "Who Wants to Get a Physics Ph.D.?" Rear: Audience applause person (**Kayle DeV Vaughn**).

BELOW: **Christian Binek** and **Greg Snow** comparing student papers in the photocopy room on "Shoe Appreciation Day."



2005



RIGHT: **Darth Vader** (**David Wisbey**), one of the oral examiners, and a physics grad student examinee (**Christina Othon**) in the game show, "Who Wants to Get a Physics Ph.D.?"



SPECTRUM

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WE WANT TO HEAR FROM YOU!

You may send us your news by using the postcard included with the mailing of this newsletter. Alternatively, send your news to:

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 University of Nebraska-Lincoln
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UNIVERSITY OF
Nebraska
 Lincoln

The University of Nebraska-Lincoln is an equal opportunity educator and employer with a comprehensive plan for diversity.

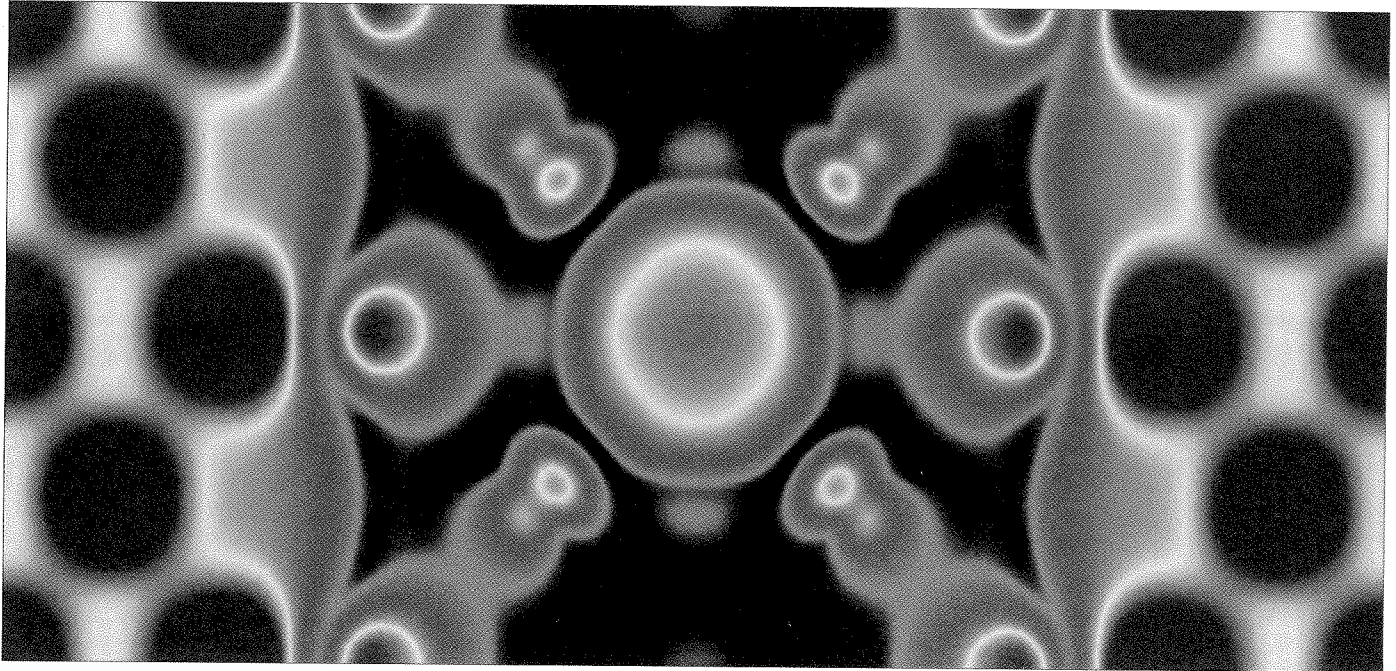


IMAGE COURTESY OF E.Y. TSYMBAL

Lack of Oxygen

Charge density in a Fe/MgO/Fe magnetic tunnel junction (MTJ) in the presence of an O vacancy (center). These results of density functional calculations elucidate the effect of oxygen vacancies on the transport properties of MTJs, which have important applications in magnetic random access memory devices and as magnetic sensors in disc drives. For a more complete description, see J.P. Velev, **K.D. Belashchenko**, **S.S. Jaswal**, and **E.Y. Tsymbal**, *Appl. Phys. Lett.* **90**, 072502 (2007).

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