



College of
Science
Department of Physics
& Astronomy

202 Nicholson Hall
Louisiana State University
Baton Rouge, LA 70803
TEL: 225-578-2261
FAX: 225-578-5855
<http://www.phys.lsu.edu>

Weekly Calendar

November 9 - 13, 2015

Goodrich Distinguish Lecture Series

"Taking the King's Shilling: From studying nuclear terrorism at LSU to briefing the Queen of England"

5:00 PM Wednesday, November 11, 2015

130 Nicholson Hall

Peter Zimmerman

Emeritus of Science & Security, Kings College London

HOST: Michael Cherry & Edward Zganjar

While teaching at LSU I got fascinated by the notion that it was just possible for a well-heeled terrorist group to build its own atomic bomb. That ultimately led to a complete change in my career pattern including extensive government service and a stint as Professor of Science and Security in London. The intersection of physics with national security policy is a fascinating field, not easier than pure physics, but with very different questions on the table, totally different constraints on your research and publications; and the fact that real lives can be lost if you give a wrong answer. My new career led me to a job working with then-Senator Joseph Biden and later to London for several years where I got to study the details of the Bush Administration's intelligence on nuclear weapons in Iraq. Along the way I had to become an expert at missile defense, export control, deterring and detecting proliferation, strategic arms control, and, after the Senate was attacked, the spread and treatment of anthrax along with many other problems I had never known existed.

Departmental Colloquium:

"Dissecting the Nuclear Accord with Iran: Goals, Physics, Policy, Politics and Where the West Went Wrong"

3:30 PM Thursday, November 12, 2015

109 Nicholson Hall

Peter Zimmerman

Emeritus of Science & Security, Kings College London

HOST: Michael Cherry & Edward Zganjar

• Refreshments served at 3:10 PM in 232 (Library) Nicholson Hall •

The recent nuclear accord with Iran is either a very good deal; the best we could possibly get; a modest check on Iran's nuclear weapon program; or far worse than no deal - a disaster about to happen. It depends on what you thought it should be, and what you hoped it would accomplish. The physics of nuclear weapons and the technologies of verification, the heart of the deal are benchmarks that should guide our evaluation of what was accomplished. I will argue that it is not a disaster in waiting, nor an extremely good deal, but it's close to the best we could achieve in 2015. As long ago as 2004 the Bush (43) Administration and the UK Government headed by Tony Blair conceded the critical points to Iran before anybody really thought critically about the goals of the negotiations, and about the optimum final state. They share the blame for the principal weaknesses of the JCPOA (Joint Comprehensive Plan of Action).

After those concessions by the West it was clear that the end game would leave Iran in possession of a quickly scalable weapons research program that could possibly give them atomic weapons in well under a year. Because some of the weapons technology and a large amount of the verification technology remain Secret or very sensitive today my talk has to be at a semi-quantitative level requiring little mathematics and little detailed knowledge of the specific physics. It's suitable for professional scientists in other fields and for scientifically aware laymen alike.

MAX GOODRICH

DISTINGUISHED LECTURE SERIES



Dr. Peter Zimmerman

Ph.D. Stanford University, 1969
Filosofie Licentiat degree, Lunds
Universitet in Lund, Sweden, 1967
experimental nuclear and
elementary particle physics

Fellow, American Physical Society, 1988

**Wednesday
November 11,
5 p.m.
Room 130
Nicholson Hall**

LSU | College of
Science
Department of Physics
& Astronomy

Taking the King's Shilling: from studying nuclear terrorism at LSU to briefing the Queen of England

A PUBLIC LECTURE BY
DR. PETER ZIMMERMAN,
PROFESSOR EMERITUS OF SCIENCE &
SECURITY, KINGS COLLEGE LONDON

While teaching at LSU I got fascinated by the notion that it was possible for a well-heeled terrorist group to build its own atomic bomb. That ultimately led to a complete change in my career pattern including extensive government service and a stint as Professor of Science and Security in London. The intersection of physics with national security policy is a fascinating field, not easier than pure physics, but with very different questions on the table, totally different constraints on your research and publications, and the fact that real lives can be lost if you give a wrong answer.

My new career led me to a job working with then-Senator Joseph Biden and later to London for several years where I got to study the details of the Bush Administration's intelligence on nuclear weapons in Iraq. Along the way I had to become an expert at missile defense, export control, deterring and detecting proliferation, strategic arms control, and, after the Senate was attacked, the spread and treatment of anthrax along with many other problems I had never known existed.



Monday, November 16 3:00-4:00pm

Live at LSU 1008B Digital Media Center

Broadcast: Tulane 600 Lindy Boggs | UNO 234 Liberal Arts
LaTech 122 Nethken Hall

Unique Opportunities for Neutrons in Soft Materials and Biology

Long-wavelength neutrons are an ideal probe for soft and biological materials because of their sensitivity to hydrogen, the possibilities of hydrogen/deuterium contrast variation and the fortunate combination of the neutron's wavelength and energy. The seminar will review research questions in soft matter and biology that have used neutrons for extracting key information that was not accessible by other techniques. Examples include breakthroughs in our understanding of natural and man-made materials such as measuring the conformation of single polymer chain molecules in their natural melt or network environment, observing details of structural and compositional changes in cell walls during biomass industrial processing, and visualizing small proteins embedded in complex inorganic matrices. The unique capabilities of neutrons point to clear opportunities in soft matter and biology and suggest a science strategy that embraces development and investments for optimized neutron instruments and sample environments, computational analysis and experiment optimization, and chemical and biochemical deuterium isotope labeling.

SEMINAR SERIES 2015



Guest Speaker

**VOLKER
URBAN**

**Acting Director,
Biology & Soft
Matter Division,
Neutron Sciences
Oak Ridge National
Laboratory**

Dr. Urban's expertise includes development of neutron scattering and X-ray scattering instrumentation, soft condensed matter, polymer synthesis and characterization, surfactants, microemulsions, composites, biological macromolecules, biomass and biomaterials.

Free and open to the public



www.physics.lsu.edu/lacns

