

Purdue Student Pugwash

Midwest Regional Conference



Global Security

Securing Our Future

April 19-20, 2013

Purdue University

West Lafayette, Indiana

Dear Conference Attendee,

On behalf of Purdue Pugwash, I would like to welcome you to the eighth annual Purdue Student Pugwash Midwest Regional Conference, “Global Security: Securing our Future.” This annual conference is our signature event of the year and embodies our mission of informing individuals and promoting discussion and critical examination of socially important issues in science and technology. Each year, we choose a topic we feel is both timely and especially relevant to both science and society and host a conference that can explore it in detail.

Ever since I joined Purdue Student Pugwash, we have discussed the idea of a conference focusing on global security. Previous conferences have explored the integrity of science, space exploration, energy and the environment, healthcare, emerging technologies, and global access to resources and information, yet none have tackled this revolutionary technology that gives rise to so many urgent social and ethical issues. With many of our longtime members graduating this year, we decided it was finally time to examine this important technological field.

Within this booklet you will find a conference itinerary, information on each session, a map of the locations of each talk, information about our organization, and biographies of each of the speakers and executive board members of Purdue Student Pugwash. Pugwash is all about critical thinking, curiosity, and discussion, and we strongly encourage you to ask questions and engage in dialogue with both speakers and fellow conference attendees.

We thank you for supporting this event and Purdue Student Pugwash in general and hope that you will find this conference to be a rewarding experience!

Sincerely,

Brian Curnett
President
Purdue Student Pugwash

WELCOME!

We would like to thank the following sponsors for their support:

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Conference Information

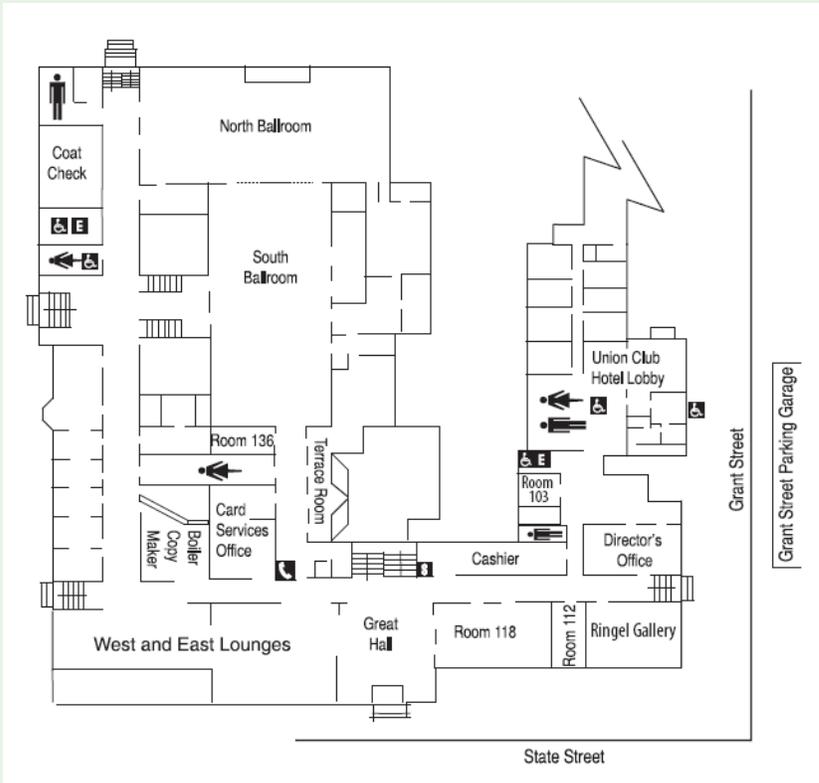
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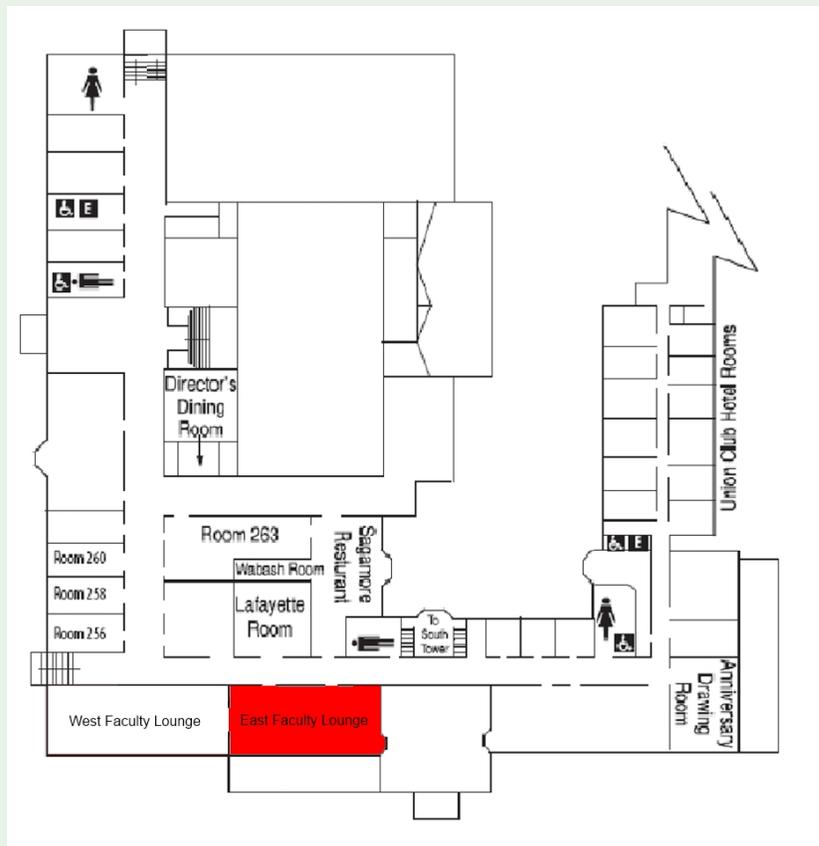
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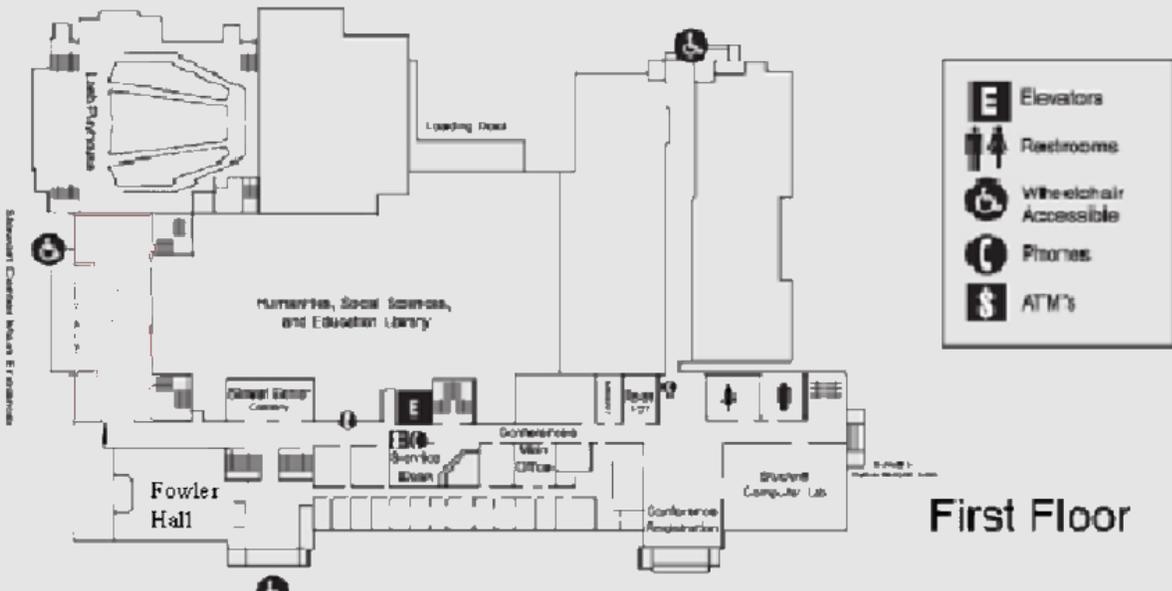


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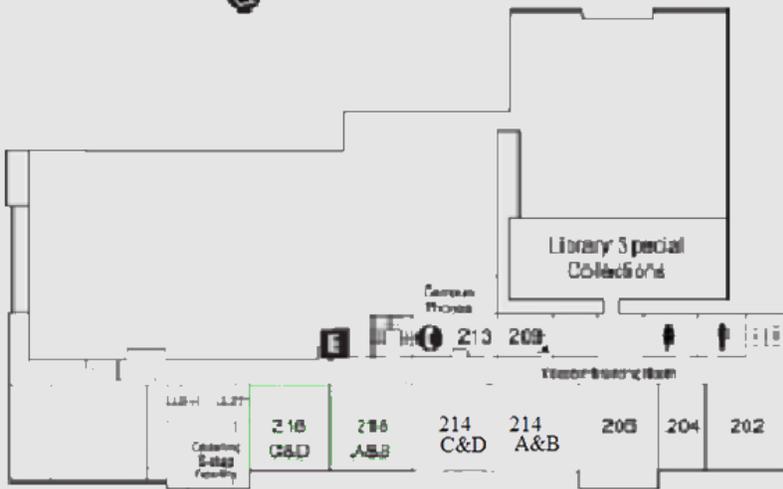
	Elevators
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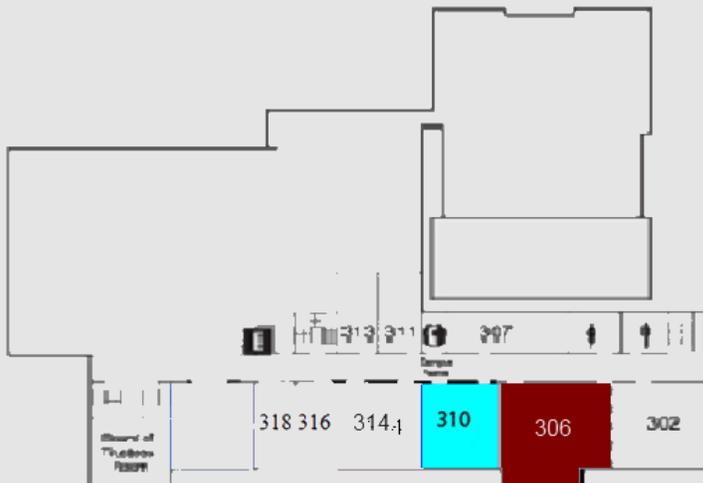
SECOND FLOOR



First Floor



Second Floor



Third Floor

FRIDAY, March 30, 2012

- 5:30—6:00 pm** **Reception & Check-in**
Purdue Memorial Union: East Faculty Lounge
- 6:00—6:10 pm** **Opening Remarks**
 Peter Meckl, Ph.D.
 Brian Curnett, Purdue Student Pugwash President
Purdue Memorial Union: East Faculty Lounge
- 6:10—7:10 pm** **BioDefense**
 David Sanders, Ph.D.
Purdue Memorial Union: East Faculty Lounge
- 7:15—8:15 pm** **Healthcare Future**
 James Anderson, Ph.D.
Purdue Memorial Union: East Faculty Lounge
- 8:20—10:30 pm** **Conference Social**
 Refreshments and Game Night
Purdue Memorial Union: East Faculty Lounge

SATURDAY, March 31, 2012

- 8:45—9:30 am** **Breakfast & Check-in**
Purdue Stewart Center: Room 306
- 9:30—10:30 am** **Nuclear Proliferation/Disarmament**
 Ivan Oelrich, Ph.D.
Purdue Stewart Center: Room 310
- 10:35—11:35 am** **Cyber Security with a Global Perspective**
 Samuel Liles, Ph.D.
Purdue Stewart Center: Room 310

- 11:40 —12:40** **Energy Security and Sustainability**
 Dhandapani Venkataraman, Ph.D.
 Purdue Stewart Center: Room 310
- 12:45—1:45 pm** **Lunch**
 Purdue Stewart Center: Room 306
- 2:00—3:00 pm** **Environmental Security and Sustainability**
 John Harbor, Ph.D.
 Purdue Stewart Center: Room 310
- 3:05—4:05 pm** **International System: Social & Economic Justice**
 Harry Targ, Ph.D.
 Purdue Stewart Center: Room 310
- 4:10—4:30 pm** **Closing Remarks**
 Peter Meckl, Ph.D.
 Purdue Stewart Center: Room 310

Friday March 30, 2012

Reception & Check-in

5:30pm—6:10pm, Union East Faculty Lounge

Check-in and join us in meeting conference speakers, sponsors, Purdue Student Pugwash officers, and other conference attendees. Upon check-in, registrants will receive a nametag, conference t-shirt, and conference materials and information. Refreshments will be served.

BioDefense

6:10pm—7:10pm, Union East Faculty Lounge

David Sanders, PhD

Associate Professor of Biological Sciences, *Purdue University*

Are we prepared for a biological weapons attack? How does a biological weapon differ from other weapons of mass destruction? In what form would a potential attack appear? What would be the objective of a biological-weapon attack? Is preparation mainly a scientific or a societal issue? What can we do to prevent and prepare for a biological-weapon attack? The speaker will share his experience of traveling to inspect the formerly secret virus laboratory, Vector, in Siberia.

Healthcare Future

7:15pm—8:15pm, Union East Faculty Lounge

James, Anderson, PhD

Fellow, American College of Medical Informatics

Despite spending more than twice as much on health care than any other country, the WHO ranked the U.S. system 37th out of all of its member nations. Provisions of the Affordable Care Act will extend health insurance coverage to 32 million uninsured Americans. However, problems of rising cost, access to primary care, providing care for the rising number of elderly remain problems that need to be addressed.

Conference Social

8:20pm—10:30pm, Union East Faculty Lounge

Join us for an evening of board games, card games, and socializing with speakers, Pugwash members, and other conference attendees. Refreshments will be provided in the form of assorted wraps, fruit, and drinks.

Saturday March 31, 2012

Reception & Check-in

8:45am—9:30am, Stewart Center Room 306

Check-in and join us in meeting conference speakers, sponsors, Purdue Student Pugwash officers, and other conference attendees. Upon check-in, registrants will receive a nametag, conference t-shirt, and conference materials and information. A breakfast featuring bagels, croissants, muffins, scones, pastries, fruit, coffee, tea, apple juice, and orange juice will be provided.

Nuclear Proliferation/Disarmament

9:30am—10:30am, Stewart Center Room 310

Ivan Oelrich, PhD

Senior Fellow for the Strategic Security Program

For the first time since the beginning of the nuclear age, some established political leaders in the US, including the President, are seriously advocating moving toward a world free of nuclear weapons. Two facets of the nuclear danger have to be addressed together: Discouraging new nations from acquiring nuclear weapons and reducing the number of nuclear weapons held by the established nuclear powers, particularly the United States and Russia. Stopping proliferation requires reducing both incentives and opportunities to acquire nuclear weapons with the opportunities closely tied to the nuclear power fuel cycle. With the end of the Cold War, the world has seen a steady and dramatic decline in the number of nuclear weapons held by the nuclear superpowers, but there is still far to go. This talk sketches out in broad terms some of the obstacles that must be overcome to dramatically reduce or eliminate nuclear weapons and the danger they pose to the world.

Cyber Security with a Global Perspective

10:35 am—11:35 am, Stewart Center Room 310

Samuel Liles, PhD

Associate Professor of Cyber Security, *Purdue University*

Cyber has been used to describe a variety of forms of activity. What is the nature of cyber power? How do nations exhibit or use cyber to compel other nations? These questions are central to understanding the role of cyber power and the nation state. Then there were the corporations. What about them?

Energy Security and Sustainability

11:40am —12:40pm, Stewart Center Room 310

Dhandapani Venkataraman, PhD

Professor of Organic, Inorganic, Polymer, and Materials Chemistry, *University of Massachusetts Amherst*

What are the scientific and technological problems in fabricating efficient organic photovoltaic cells? What are the energy needs and energy resources available to meet these needs? This talk will discuss the physics of the photovoltaic cells, the differences between silicon and organic solar cells, and the efforts to direct organization of semiconductors into nanoscale assemblies.

Lunch

12:45am—1:45pm, Stewart Center Room 306

Lunch will consist of a pasta buffet, including Caesar salad, garlic bread, cheese tortellini, rotini, eggplant parmigiana, Italian sausage with peppers, focaccia, cannolis, and tea cookies. Coffee, decaf coffee, hot tea, iced tea, lemonade, and ice water will be available to drink.

Environmental Security and Sustainability

2:00pm—3:00pm, Stewart Center Room 310

Jon Harbor, PhD

Professor and Head of Earth, Atmospheric, and Planetary Sciences, *Purdue University*

Environmental sustainability might not seem like a central issue in global security, compared to biological weapons, nuclear arms and cyber security. However, perhaps the reasons underlying conflict are just as important for thinking about global security as the weapons intended to prevent or pursue conflict. In this interactive session we will explore key concepts and themes in environmental sustainability and whether these might be critical for understanding and addressing underlying causes of global insecurity.

International System: Social & Economic Justice

3:05pm—4:05pm, Stewart Center Room 310

Harry Targ, PhD

Professor; Coordinator, Committee on Peace Studies, *Purdue University*

This presentation will examine the history of the modern international political economy in the era of neoliberal globalization and growing grassroots resistance to it. Some attention will be given to systemic forms of resistance to the traditional international economic and political order and the emergence of grassroots mobilizations from Arab Spring, to Heartland labor activism, to the Occupy Movement.

Opening Remarks

Peter Meckl, PhD

Professor of Mechanical Engineering at Purdue University, Faculty Advisor to Purdue Student Pugwash

Peter H. Meckl obtained a PhD in Mechanical Engineering from MIT in 1988. He joined the faculty in the School of Mechanical Engineering at Purdue University in 1988. Dr. Meckl's research interests are primarily in dynamics and control of machines, with emphasis on vibration reduction and motion control. His teaching responsibilities include undergraduate courses in systems modeling, measurement systems, and control, and graduate courses in advanced control design, and microprocessor control.

Dr. Meckl was selected as an NEC Faculty Fellow from 1990 to 1992. He received the Ruth and Joel Spira Award for outstanding teaching in 2000. He spent a semester in the Institute of Measurement and Control Engineering at the University of Karlsruhe, Germany in spring 2005, teaching undergraduate control courses and developing a new course in autonomous vehicle control.



BioDefense

David Sanders PhD

Associate Professor of Biological Sciences at Purdue University

David Sanders received his Bachelor of Science degree from Yale College in Molecular Biophysics and Biochemistry. Following a position as a Visiting Scientist at the University of California at San Francisco, where he studied signal-transducing GTPases, he was a postdoctoral fellow at the Whitehead Institute for Biomedical Research, which is affiliated with M.I.T. It was there that he began his studies on the entry of viruses into cells with a focus on the inhibition of infection and applications to gene therapy. He joined the Markey Center for Structural Biology at Purdue in 1995, where he is also a member of the Cancer Center.

Dr. Sanders was the discoverer of a biochemical reaction that leads to the entry of cancer-causing retroviruses into cells. His work on the Ebola virus led to his participation in the U.S. Defense Threat Reduction Agency's Biological Weapons Proliferation Prevention Program, a product of the Nunn-Lugar legislation. His responsibilities included inspecting the Vector laboratory in Siberia, which was the site of biological-weapons development in the era of the Soviet Union. He has investigated the transmission of viruses from other animals, especially birds, to humans and is often invited to speak on biodefense, evolution, gene therapy, vaccination and influenza viruses in public forums, including regular interviews on WIBC in Indianapolis. He is a recipient of the National Science Foundation CAREER Award and an American Cancer Society Research Scholar.



Healthcare Future

James G. Anderson, PhD

Fellow, American College of Medical Informatics

James Anderson, Ph.D. earned a B.E.S. in Chemical Engineering, M.S.E. in Operations Research and Industrial Engineering, M.A.T. in Chemistry and Mathematics, and a Ph.D. in Education and Sociology from the Johns Hopkins University. At Purdue, he has served as Assistant Dean for Analytical Studies of the School of Humanities, Social Sciences and Education (1975-1978), Associate Director of the Health Services Research Training Program supported by the U.S. Public Health Service (1971-1976), Director of the Social Research Institute (1995-1998), and Co-Director of the Rural Center for AIDS/STD Prevention (1994-2006).

His work has been recognized by outstanding research awards by the American Association for Medical Systems and Informatics (1983), the Association of American Medical Colleges, the Alliance for Continuing Medical Education, and the American Medical Informatics Association. He was elected Fellow American College of Medical Informatics, 2003 awarded the Seeds of Excellence Award for Contributions to the Research Enterprise at Purdue University, 2005 and Elected Fellow Center for Education and Research in Information Assurance and Security ([CERIAS](#)), 2009. He currently serves on a peer review panel for the NIH Agency for Healthcare Research & Quality (AHRQ), as Associate Editor of the International Journal of Reliable and Quality E-Healthcare, on the editorial board of the American Medical Informatics Association.



Nuclear Proliferation/Disarmament

Ivan Oelrich, PhD

Senior Fellow for the Strategic Security Program

His introduction to national security began at the Institute for Defense Analyses where he evaluated new technologies for defense applications, and supported the START and INF Treaty negotiations. Oelrich left IDA for a one-year fellowship at the Center for Science and International Affairs, On his return to Washington, DC, he accepted a position as a senior analyst at the Office of Technology Assessment where he investigated the needs of the military industrial base and wrote a treatise on friendly fire prompted by experience in the Persian Gulf War.

Returning to IDA, Oelrich focused on environmental restoration of lands belonging to the U.S. Departments of Defense and Energy. Oelrich focused on emerging nuclear threats at the Advanced Systems and Concepts Office of the Defense Threat Reduction Agency where he supported General Shalikashvili's review of the Comprehensive Test Ban Treaty. He returned to IDA for one year before joining the Federation of American Scientists, where he focuses on issues related to nuclear testing and the testing moratorium, proliferation of nuclear weapons and nuclear materials, the structure of future US nuclear forces, and sizing conventional military forces in the post-Cold War world.



Oelrich received his BS from the University of Chicago and a Ph.D. from Princeton University, both in chemistry. He was a pre-doctoral Research Associate at Lawrence Livermore National Laboratory. He also conducted research in nuclear physics and taught in the Physics Department of the Technical University of Munich in Germany.

Cyber Security with a Global Perspective

Samuel Liles, PhD

Associate Professor of Cyber Security at Purdue University

Dr. Samuel Liles is an associate professor specializing in transnational cyber threats and computer forensics at Purdue University in West Lafayette, Indiana, in the College of Technology. He is a faculty member with the Center for Education and Research in Information Assurance and Security (CERIAS). He previously worked at the National Defense University in the Cyber Integration and Information Operations Department of the iCollege and at Purdue University Calumet prior to that. Dr. Liles has written on non-state actors, cyber warfare as a low-intensity conflict, conceptual analysis of cyber warfare and non-traditional assumptions of information assurance and security discipline. With over 30 years of experience and having served in the military, law enforcement, industry and academia his current research is into cyber conflict and forensics as a form of attribution. He has a masters degree in computer science from Colorado Technical University, and his Ph.D. is from Purdue University. His area of interests are cyber conflict, forensic attribution, and embedded systems forensics.



Energy Security and Sustainability

Dhandapani Venkataraman, PhD

Professor of Organic, Inorganic, Polymer, and Materials Chemistry at University of Massachusetts Amherst

Dhandapani Venkataraman received his Bachelor of Science degree from University of Madras, Masters from the Indian Institute of Technology, and Ph.D. from the University of Illinois under advisors Prof. Jeff Moore at UIUC and Prof. Stephen Lee at the University of Michigan (now at Cornell). He did his Postdoctoral research at Cornell University with Prof. Frank DiSalvo and Prof. Jean Fréchet. His research focuses on an interdisciplinary approach that is taken to address some of the topical research problems in Chemistry. The research areas of current focus include catalysis, nanoscale segregated semiconductor morphologies in organic and hybrid photovoltaic cells, chiroptical properties of helical electroactive molecules, proton transport in rigid scaffolds, hydrogen production through photoelectrocatalysis. He received the Camille and Henry Dreyfus New Faculty Award, NSF CAREER award, CVIP Technology Award, College of NSM Outstanding Teacher award.



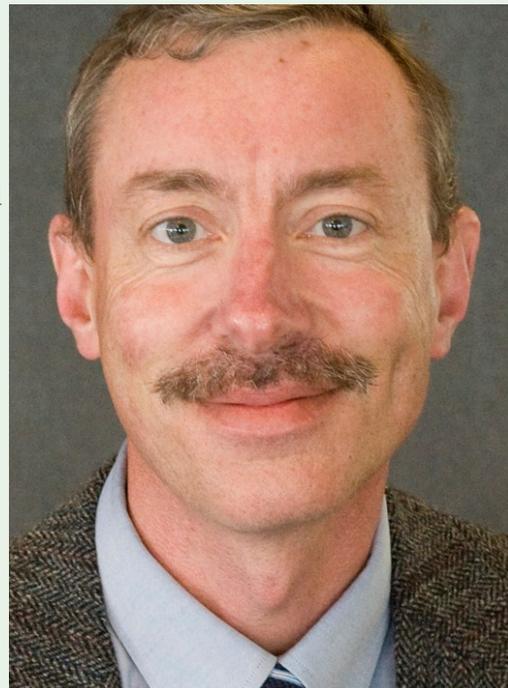
Environmental Security and Sustainability

Jon Harbor PhD

Professor and Head of Earth, Atmospheric, and Planetary Sciences, Purdue University

Jon Harbor is an environmental scientist with research interests that include modeling and managing hydrologic impacts of urban land use change, geologic records of past glaciations in North America, Europe and Asia, and innovative approaches to teaching and learning in environmental science. He currently serves as Head of the Department of Earth and Atmospheric Sciences, and has previously served Purdue as an Associate Vice President for Research, Interim Dean and Associate Dean for Research in the College of Science, and founding co-director of the Discovery Learning Research Center in Discovery Park. He also served as Dean of the College of Liberal Arts and Sciences at the University of Colorado at Denver and Health Sciences Center.

Harbor is an award-winning undergraduate teacher and graduate student mentor, has an extensive record of external funding for interdisciplinary research and education initiatives, and has co-authored over 100 journal papers and 30 book chapters and conference proceedings papers in environmental science and education research. He earned his PhD in geological sciences from the University of Washington in Seattle in 1990, and has a master's degree in geography from the University of Colorado at Boulder, and a bachelor's degree in geography from the University of Cambridge (U.K.). Harbor joined Purdue in 1994 and is a Fellow of the American Association for the Advancement of Science, a Fellow of the Royal Geographical Society, a Fellow of the Purdue Teaching Academy, and served as a Fulbright Senior Scholar in New Zealand in 2000-01. He currently serves as the Earth Surface Processes editor for *Earth Science Reviews*, and has served on the editorial boards of the journals *Geomorphology*, *Physical Geography*, the *Journal of Mountain Science*, the *Journal of Terrestrial Observation*, and the *Geographical Journal*.



International System: Social & Economic Justice

Harry Targ Ph.D

Professor; Coordinator, Committee on Peace Studies, Purdue University

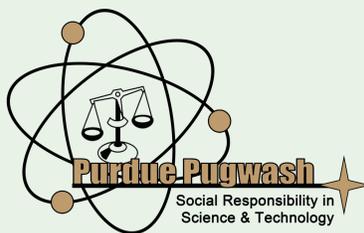
Professor Targ has teaching and research interests in U.S. and international political economy, U.S. foreign policy, organized labor and class struggle, plant closings and unemployment, and U.S. foreign policy in Central America. He has authored *International Relations in a World of Imperialism and Class Struggle*; *Strategy of an Empire in Decline: Cold War II*; and co-authored *Plant Closings: International Context and Social Costs*. His book, *Cuba and the United States: A New World Order?* was published in 1992. A co-edited volume, *Marxism Today*, was published in 1996. Also, he has co-authored children's books on Guatemala and Honduras. More recently he published, *Challenging Late Capitalism, Neoliberal Globalization, and Militarism and Diary of a Heartland Radical*.



In 1955, Albert Einstein, Bertrand Russell, and several other eminent scientists issued a manifesto urging scientists and world leaders to “think in a new way” about their moral responsibilities in the nuclear age. The manifesto called on scientists to assemble and discuss the issue of nuclear war as individual members of the human race, and not as representatives of governments or nations. In 1957, a conference was held in Pugwash, Nova Scotia, that brought together some of the greatest scientific minds of the time to address the issues surrounding nuclear weapons and the social responsibility of scientists. This conference was the first in a series of annual conferences that continues to the present day: the Pugwash Conferences on Science and World Affairs.

The mission of the Pugwash Conferences on Science and World Affairs is to bring scientific reason and insight to bear on threats to human security arising from science and technology in general and, above all, from the catastrophic threat posed to humanity by nuclear and other weapons of mass destruction. In recognition of their work toward this goal, Pugwash and one of its founders, Sir Joseph Rotblat, were awarded the Nobel Peace Prize in 1995.

In 1979, two student branches of Pugwash were formed, Student Pugwash USA (SPUSA) and International Student Pugwash. By creating open and objective forums for debate, fostering the exchange of ideas among diverse communities, exploring solutions to current dilemmas in science and technology, and cultivating the analytical skills needed to address future challenges, SPUSA prepares students to make social responsibility a guiding focus of their academic and professional endeavors.

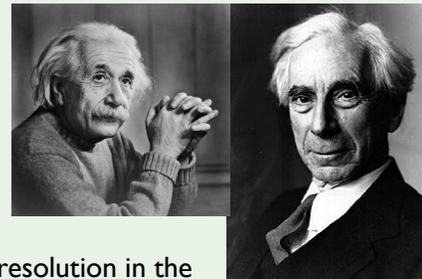


Purdue Student Pugwash is Purdue University’s chapter of Student Pugwash USA. Purdue Pugwash was founded in 1991 by Scott Wright under the faculty direction of Dr. Normand Laurendeau, a retired professor of mechanical engineering. Since then, Pugwash has had a significant impact on the community’s awareness of critical issues by holding events where experts interact closely with students and community members.

Purdue Pugwash is now the most active SPUSA chapter in the United States. During the 2011-2012 academic year, Purdue Student Pugwash has hosted more than 10 speakers for the “Pugwash Presents” lecture series, 7 discussion groups, 3 tours of campus research facilities, 5 hands-on technology building events, and various social events. Most notably, Purdue Pugwash is hosting its seventh annual conference, “Biotechnology: Risks and Rewards of Rewriting Life” and continues to promote community awareness of social and ethical issues in science and technology.

The Russell Einstein Manifesto

Issued in London, 9 July 1955



IN the tragic situation which confronts humanity, we feel that scientists should assemble in conference to appraise the perils that have arisen as a result of the development of weapons of mass destruction, and to discuss a resolution in the spirit of the appended draft.

We are speaking on this occasion, not as members of this or that nation, continent, or creed, but as human beings, members of the species Man, whose continued existence is in doubt. The world is full of conflicts; and, overshadowing all minor conflicts, the titanic struggle between Communism and anti-Communism.

Almost everybody who is politically conscious has strong feelings about one or more of these issues; but we want you, if you can, to set aside such feelings and consider yourselves only as members of a biological species which has had a remarkable history, and whose disappearance none of us can desire.

We shall try to say no single word which should appeal to one group rather than to another. All, equally, are in peril, and, if the peril is understood, there is hope that they may collectively avert it.

We have to learn to think in a new way. We have to learn to ask ourselves, not what steps can be taken to give military victory to whatever group we prefer, for there no longer are such steps; the question we have to ask ourselves is: what steps can be taken to prevent a military contest of which the issue must be disastrous to all parties?

The general public, and even many men in positions of authority, have not realized what would be involved in a war with nuclear bombs. The general public still thinks in terms of the obliteration of cities. It is understood that the new bombs are more powerful than the old, and that, while one A-bomb could obliterate Hiroshima, one H-bomb could obliterate the largest cities, such as London, New York, and Moscow.

No doubt in an H-bomb war great cities would be obliterated. But this is one of the minor disasters that would have to be faced. If everybody in London, New York, and Moscow were exterminated, the world might, in the course of a few centuries, recover from the blow. But we now know, especially since the Bikini test, that nuclear bombs can gradually spread destruction over a very much wider area than had been supposed.

It is stated on very good authority that a bomb can now be manufactured which will be 2,500 times as powerful as that which destroyed Hiroshima. Such a bomb, if exploded near the ground or under water, sends radio-active particles into the upper air. They sink gradually and reach the surface of the earth in the form of a deadly dust or rain. It was this dust which infected the Japanese fishermen and their catch of fish. No one knows how widely such lethal radio-active particles might be diffused, but the best authorities are unanimous in saying that a war with H-bombs might possibly put an end to the human race. It is feared that if many H-bombs are used there will be universal death, sudden only for a minority, but for the majority a slow torture of disease and disintegration.

Many warnings have been uttered by eminent men of science and by authorities in military strategy. None of them will say that the worst results are certain. What they do say is that these results are possible, and no one can be sure that they will not be realized. We have not yet found that the views of experts on this question depend in any degree upon their politics or prejudices. They depend only, so far as our researches have revealed, upon the extent of the particular expert's knowledge. We have found that the men who know most are the most gloomy.

Here, then, is the problem which we present to you, stark and dreadful and inescapable: Shall we put an end to the human race; or shall mankind renounce war? People will not face this alternative because it is so difficult to abolish war.

The abolition of war will demand distasteful limitations of national sovereignty. But what perhaps impedes understanding of the situation more than anything else is that the term "mankind" feels vague and abstract. People scarcely realize in imagination that the danger is to themselves and their children and their grandchildren, and not only to a dimly apprehended humanity. They can scarcely bring themselves to grasp that they, individually, and those whom they love are in imminent danger of perishing agonizingly. And so they hope that perhaps war may be allowed to continue provided modern weapons are prohibited.

This hope is illusory. Whatever agreements not to use H-bombs had been reached in time of peace, they would no longer be considered binding in time of war, and both sides would set to work to manufacture H-bombs as soon as war broke out, for, if one side manufactured the bombs and the other did not, the side that manufactured them would inevitably be victorious.

Although an agreement to renounce nuclear weapons as part of a general reduction of armaments would not afford an ultimate solution, it would serve certain important purposes. First, any agreement between East and West is to the good in so far as it tends to diminish tension. Second, the abolition of thermo-nuclear weapons, if each side believed that the other had carried it out sincerely, would lessen the fear of a sudden attack in the style of Pearl Harbour, which at present keeps both sides in a state of nervous apprehension. We should, therefore, welcome such an agreement though only as a first step.

Most of us are not neutral in feeling, but, as human beings, we have to remember that, if the issues between East and West are to be decided in any manner that can give any possible satisfaction to anybody, whether Communist or anti-Communist, whether Asian or European or American, whether White or Black, then these issues must not be decided by war. We should wish this to be understood, both in the East and in the West.

There lies before us, if we choose, continual progress in happiness, knowledge, and wisdom. Shall we, instead, choose death, because we cannot forget our quarrels? We appeal as human beings to human beings: Remember your humanity, and forget the rest. If you can do so, the way lies open to a new Paradise; if you cannot, there lies before you the risk of universal death.

Resolution:

WE invite this Congress, and through it the scientists of the world and the general public, to subscribe to the following resolution:

"In view of the fact that in any future world war nuclear weapons will certainly be employed, and that such weapons threaten the continued existence of mankind, we urge the governments of the world to realize, and to acknowledge publicly, that their purpose cannot be furthered by a world war, and we urge them, consequently, to find peaceful means for the settlement of all matters of dispute between them."

Max Born

Frederic Joliot-Curie

Joseph Rotblat

Percy W. Bridgman

Herman J. Muller

Bertrand Russell

Albert Einstein

Linus Pauling

Hideki Yukawa

Leopold Infeld

Cecil F. Powell

Brian Curnett | President

Brian is a senior majoring in Chemistry with minors in Forensic Science and Psychology. He joined Pugwash after the 2011 Conference where he found Pugwash to be an excellent forum for learning about the broad reaching implications of the scientific and technological changes that are shaping our world today. He has always supported Pugwash's mission of socially conscious science and technology, and greatly enjoys the organization's atmosphere of objective intellectual exploration. Outside of Pugwash, Brian is the president of the Purdue Forensic Science Club and a member of the American Chemical Society.



Johnny Tam | Treasurer

Johnny is a junior studying Chemistry with a Creative Writing minor. He joined Purdue Student Pugwash in the fall and quickly assumed the role of Treasurer within the organization. He joined initially out of curiosity and then stayed after striking a chord with Pugwash's message of moral and ethical responsibility in science and technology. He is studying organic synthesis as an undergraduate researcher assisting with the synthesis of pendant polymers for use as vectors in drug delivery. Johnny also plays trombone as a proud member of the Purdue University Bands and Orchestras.

Talin Darian | Vice President

Talin is majoring in Biochemistry/Chemistry, ACS and is in her junior year. She is currently the Vice President for Purdue Student Pugwash. Outside of Pugwash she is involved in hard drive recovery research with the cyber forensics department at Purdue University as well as involved in research with the Plastic Surgery Department at the University of Michigan. Next year, she hopes to get involved in nutrition science research and become a teaching assistant for a cellular biology lab. In her spare time, Talin is involved in the Purdue Ski and Snowboard Club and has traveled to Aspen and Park City in the past few years. After college, Talin plans to attend medical school and one day become a surgeon.





Jason Magan | Director of Programming

Jason Magan is a junior majoring in Neurobiology & Physiology with a minor in Sociology. He joined Pugwash this past Fall with hopes of contributing some effort in pushing the organization beyond the pure physical sciences, and into the world of liberal arts and the life sciences. He is currently a Patient Transporter at IU Health Arnett Hospital and also tutors in Biology for the Horizons Student Support Services. In his spare time he enjoys helping others through volunteering. Jason's ultimate goal is to become a physician and he aspires to open up a food bank one day in a needy community.

Rachel Svetanoff | Director of Publicity

Rachel is a junior in Biochemistry/Chemistry pursuing a minor in Biology. After learning about Pugwash's mission, she wanted to help promote the organization's goals because she too believes in encouraging those to consider morality when making impactful decisions in advanced sciences and technology. Outside of Pugwash, Rachel obtained an internship with Eli Lilly as an analytical chemist in the Quality Control laboratories. She is also involved with undergraduate research at Purdue in chemical education under Dr. George Bodner. She is assisting in investigating how to overcome constraints instructors face that interfere with creating a classroom environment with optimum methods for students to learn. She also participated in Dr. Shepson's research team in Atmospheric Chemistry by assisting in the measuring of greenhouse gas concentrations around Indianapolis. Other student organizations Rachel is involved with include but are not limited to:

Purdue Science Student Council as head of Community Outreach, American Chemical Society Student Affiliates as Secretary, and Women In Science Program as a mentor. She enjoys helping communities in need by volunteering at IU Arnett Hospital, and going to Pensacola on a mission trip to build a Habitat House with St. Thomas Aquinas.



Kevin Wojcik | Director of Personnel

Kevin Wojcik is a senior in the College of Science majoring in Chemistry and minoring in Sociology. He is the acting Director of Personnel of Purdue Pugwash. He has also been a member of Acacia Fraternity since 2010. He is working on a research project with fellow Pugwash members Brian Curnett and Talin Darin in the Cyber Forensics Department. He previously has worked on the Student Corn and Soy Product Innovation Competition which his team won favorite invention and he is also an Eagle Scout. He enjoys watching and playing a wide variety of sports, going fishing and camping, and hanging out with his fraternity brothers. After graduation, he hopes to go into industry and live in Indianapolis with his girlfriend, Karen.



James Sperl | Secretary

James Sperl is a current senior at Purdue University. His major is Biochemistry, within the Department of Chemistry. Extracurricular activities are an important part of his undergraduate career, with involvement in the American Chemical Society Student Affiliates (ACSSA) as the Vice President, and in Purdue Student Pugwash as both an Executive Board Member and Secretary. With great concern for current world issues around science and related fields, joining Pugwash was a natural fit for him, especially as it emphasizes ethics and responsibility. He has loved contributing to the organization in any way possible, but especially in the way of “talk” ideas that bring awareness to the local community, and inspire the people to take action. His hobbies are mostly musically related. He receives great joy from performing when he can, and composing at the strike of inspiration. James will be graduating in May, and hopes to attend medical school.



Tejasvi Parupudi | Technology Coordinator

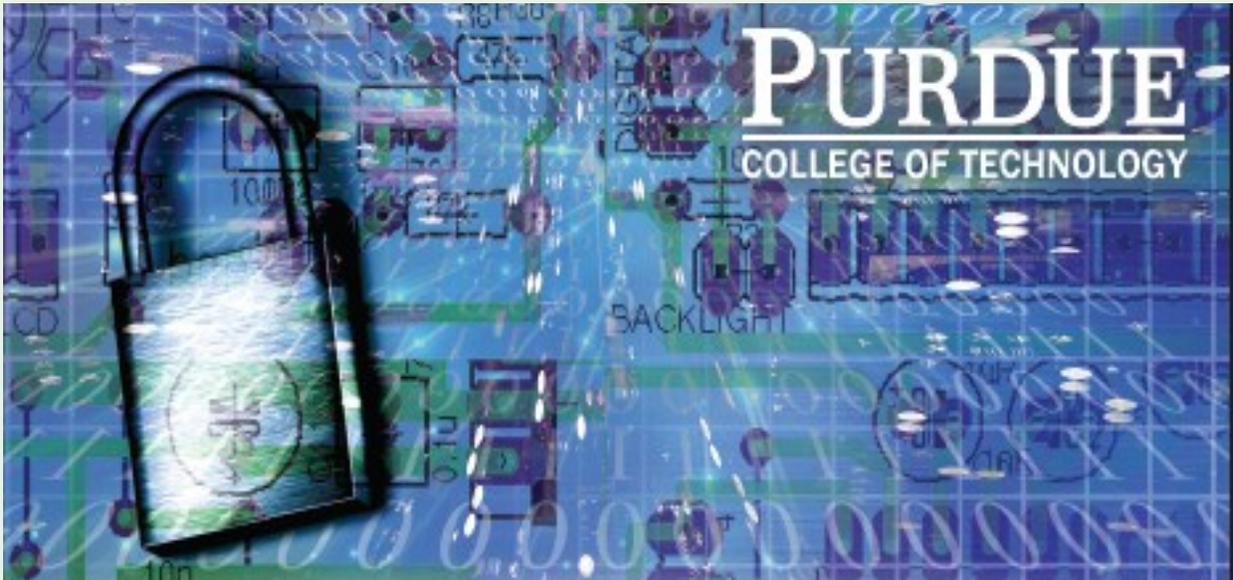
Tejasvi is a Masters student in Purdue's Electrical Engineering Technology department. He joined Pugwash to help organize events and gain leadership experience. He organized an activity with the help of College of Technology to design and build an ECG circuit to measure electrical signal from the heart. He does research on Atomic Force Microscopy at the Birck Nanotechnology Center. He is a member of the Indian Classical Music Association and BoilerOUT cohorts. He is interested in building biomedical microdevices for neurocentric diseases and one day, plans to explore consciousness 'electrically'.

Devin Slagle | Executive Council

Devin is a senior at Purdue studying Chemical Engineering. He has been involved with Pugwash for one year and currently works as Pugwash's webmaster. He heard about Pugwash from a friend and after learning more about it decided to join. He is also involved as a member of Acacia Fraternity and a member of AIChE. In his free time, Devin enjoys playing music, video games, and socializing with his friends. After school, he plans to work in medical research and then go back and get his PhD.



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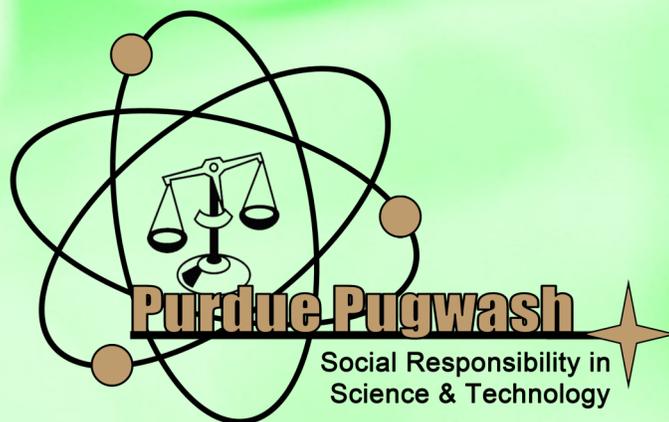
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