

# 8<sup>TH</sup> ANNUAL MEETING & SYMPOSIUM

SEPTEMBER 17, 2015 | MUSEUM OF FLIGHT, SEATTLE, WA

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*Save The Date!*

**9th Annual Symposium**

Thursday, September 15th, 2016

Museum of Flight

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## PROGRAM AGENDA

8:00 – 12:00 **Registration**

8:00 – 9:00 **Continental Breakfast**

9:00 – 11:15 **Business Meeting** – Members only

9:00 – 10:00 All Member Meeting

10:00 – 11:15 Individual Section Meetings

11:30 – 12:00 **K-12 Awards and Recognition**

12:00 – 1:00 **Lunch (Student Posters)**

1:00 – 5:30 **Symposium – Accelerating Science's Impact: Translating Discoveries into Solutions**

*Symposium Chair: Dr. Allan Konopka, President-elect, WSAS*

1:00 – 1:50 **Keynote: Lost in Translation: Data as the Compass to Success**

*Dr. Trevor Mundel, President Global Health, Gates Foundation*

### **Case Studies in Translational Science**

1:55 – 2:30 **Crop Biotechnology: From Discovery to Application**

*Dr. R. James Cook, Professor Emeritus, Washington State University*

2:35 – 3:10 **Environmental Science and Decision Making at Hanford**

*Dr. John Zachara, Battelle Fellow, Pacific Northwest National Laboratory*

3:20 – 3:40 **Break**

3:40 – 5:30 **Interactive panel on Translational Science for Health and Disease  
Barriers and Solutions** (10 min. remarks by each participant and 60 min. of discussion)

### **Moderator**

- ▶ *Dr. Vikram Jandhyala, Vice-Provost for Innovation and Executive Director of CoMotion, University of Washington*

### **Participants**

- ▶ *Dr. David Baker, Professor of Biochemistry, and Director Institute of Protein Design, University of Washington*
- ▶ *Dr. C. Anthony Blau, Professor of Medicine and Director Center for Cancer Innovation, University of Washington*
- ▶ *Dr. S. Malia Fullerton, Professor of Bioethics and Humanities, University of Washington*
- ▶ *Dr. John Latham, Chief Scientific Officer, Alder Biopharmaceuticals, Bothell, Washington*
- ▶ *Ms. Maura Little, Director of Life Sciences & Global Health Development, Washington State Department of Commerce*

5:30 – 6:15 **Induction of New Members**

6:15 – 7:00 **Reception**

7:00 – 9:00 **Dinner**

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WSAS LEADERSHIP 2015-16

## WSAS Officers

Allan Konopka, President (Purdue University)  
Anjan Bose, President-elect (Washington State University)  
R. Curtis Graeber, Secretary (The Boeing Company, (retired))  
Eugene Nester, Treasurer (University of Washington, (emeritus))  
Nancy F. Woods, Past-President (University of Washington)

## WSAS Board members

Philip Bernstein, Microsoft Research  
Cathryn Booth-LaForce, University of Washington  
Sue Clark, Washington State University  
David Eaton, University of Washington  
Kristina Katsaros, Northwest Research Associates, (emeritus)  
Thomas Marsh, Washington State University  
George "Pinky" Nelson, Western Washington University  
Donald Patrick, University of Washington  
Mick Smerdon, Washington State University  
Andy S. Stergachis, University of Washington  
Ronald Thom, Pacific Northwest National Laboratory  
Usha Varanasi, University of Washington

## WSAS Committees

Executive Committee, Allan Konopka, Chair  
Finance Committee, Eugene Nester, Chair  
Membership Committee, Sue Clark  
K-12 Activities Committee, George "Pinky" Nelson  
2015 Annual Meeting Committee, Anjan Bose, Chair  
Study Oversight Committee, Anjan Bose, Chair  
Nominations Committee for Election of Officers, Nancy Woods, Chair

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GUEST STUDENTS AND THEIR SPONSORS

## WSAS American Junior Academy of Sciences (AJAS) Award Recipients

### Representing Washington at the 2015 Annual AJAS Convention

Students selected for their excellent academic record, with strong scientific merit and a strong interest in science or engineering and research.

#### Surabhi Mundada

*MyGlove: Assisting Hand movements, Grip, and Tremor*

Olympia High School

#### Mehar Nallamalli

*Safety Alert Mobile Application*

Capital High School

### Finalists for the AJAS Award

#### Naveena Bontha

Richland High School

#### Mahalaxmi (Mahi) Elango

Interlake High School

#### Bilal Manzer

Camas High School

#### Sriharshita Musunuri

Henry M. Jackson High School

We would like to thank these sponsors on behalf of our students, teachers, and mentors!



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WASHINGTON STATE SCIENCE FAIRS & SYMPOSIA

Members of the Washington State Academy of Sciences are encouraged to attend and participate (e.g. as a judge or a student mentor) in the activities of the various annual state fairs and symposia. Following is a listing of such events and contact persons:

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**Mid-Columbia Regional Science and Engineering Fair**  
(<http://www.mcsf.net/>)

Kennewick, WA

March

Joyce Stark, Fair Director

Phone: 509 837-2601; E-mail: [director@mcsf.net](mailto:director@mcsf.net)

Larry Chick, Judging Director

Phone: 509-375-2145; E-mail: [larry.chick@pnl.gov](mailto:larry.chick@pnl.gov)

**South Science Regional Science Fair** (<http://www.plu.edu/scifair/>)

Pacific Lutheran University, Tacoma, WA

March - April

Steve Colgan, Fair Director

Phone: 253-535-7148; E-mail: [colgansj@plu.edu](mailto:colgansj@plu.edu)

**Central Sound Regional Science and Engineering Fair**  
(<http://scidiv.bellevuecollege.edu/sami/scifair/>)

Bellevue College, WA

March

Kent Short, Fair Director

Phone: 425-564-3055; E-mail: [jennifer.pang@bellevuecollege.edu](mailto:jennifer.pang@bellevuecollege.edu) or [sami@bellevuecollege.edu](mailto:sami@bellevuecollege.edu)

**Southwest Washington Science & Engineering Fair**

Vancouver, WA

February - March

Carol Ramsey, Fair Director; E-mail: [carolramsey1@comcast.net](mailto:carolramsey1@comcast.net)

**Washington State Science and Engineering Fair**  
(<http://www.wssef.org/>)

Bremerton, WA

March - April

Michael Huey, President

Lois Jane Lugg, Fair Director;

E-mail: [ljlugg@bpa.gov](mailto:ljlugg@bpa.gov)

Gary Foss, Educational Outreach Chairman

E-mail: [gary.c.foss@boeing.com](mailto:gary.c.foss@boeing.com)

**Washington Junior Science and Humanities Symposium** (<http://wjshs.org/>)

Seattle Pacific University, Seattle, WA

March

Ray Myers, Director

Phone: 206-218-8830; E-mail: [remyers@spu.edu](mailto:remyers@spu.edu)

**Northwest BioExpo** (<https://www.nwabr.org/events-programs/student-events/2016-student-bio-expo>)

Janis Wignall, Expo Director

E-mail: [bioexpo@nwabr.org](mailto:bioexpo@nwabr.org)

Phone: 206-957-3337

**WSU Imagine Tomorrow**  
<http://imagine.wsu.edu/>

Pullman, WA

May

M. Grant Norton, Professor, College of Engineering and Architecture, and Honors College Dean, WSU;  
Email: [norton@mme.wsu.edu](mailto:norton@mme.wsu.edu)

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SPEAKERS

## HEALTH DISPARITIES IN WASHINGTON STATE:

*Symposium Chair: Dr. Allan Konopka, President-elect, WSAS*

### Keynote Address: **Lost in Translation: Data as the Compass to Success**

**Trevor Mundel, President, Global Health Program, Gates Foundation**



Dr. Trevor Mundel, president of the Global Health Program, leads the foundation's efforts in research and development of health solutions including vaccines, drugs, and diagnostics, focusing on health problems that have a major impact in developing countries but get too little attention and funding. He oversees the Global Health Program's work which harnesses innovations in science and technology, to fight diseases such as HIV/AIDS, tuberculosis, and malaria. Mundel joined the foundation in 2011. Mundel's professional background is in healthcare. He earned his bachelor's and medical degrees from the University of the Witwatersrand in Johannesburg, South Africa. He also studied mathematics, logic and philosophy at Balliol College, University of Oxford as a Rhodes Scholar, and earned his Ph.D. in mathematics at the University of Chicago.

### Address: **Crop Biotechnology: From Discovery to Application**

**R. James Cook, Professor Emeritus, Washington State University**



R. James (Jim) Cook is best known for his research at Washington State University on biological and ecological approaches to manage root diseases of wheat. He served at WSU as a research plant pathologist with the U.S. Department of Agriculture, Agricultural Research Service (ARS) for 33 years starting in 1965. From 1993 to 1996, he headed up the USDA National Research Initiative Competitive Grants Program while maintaining his research program at Pullman. From 1998 to 2003, he held the R. J. Cook Chair in Wheat Research, a position endowed with a \$1.5-million gift to the WSU Foundation from the Washington Wheat Commission. He then assumed the duties of interim dean of the WSU College of Agricultural, Human and Natural Resource Science for 2 years before retiring in late 2005. In 2006, the WSU Board of Regents named WSU's newest research farm the R. James Cook Agronomy Farm, in recognition

of his career-long leadership in applied crop and soil management. He served as president of the American Phytopathological Society in 1983/84, the International Society for Plant Pathology from 1985 to 1993, and the Washington State Academy of Sciences in 2010/11. He has coauthored two books on biological control of plant pathogens and one on wheat health management, and more than 200 research publications on plant diseases and crop management. He was elected to the U.S. National Academy of Sciences in 1993 and the U.S. Agricultural Research Service Science Hall of Fame in 1997. He holds BSc and MSc. degrees from North Dakota State University, a PhD from the University of California, Berkeley, and honorary doctorates from North Dakota State and the University of Turin. In 2011, he was named co-winner of the Wolf Prize in Agriculture, awarded in Israel with the presentation made by President Shimon Peres.



**Address: Environmental Science and Decision Making at Hanford****John Zachara, Battelle Fellow, Pacific Northwest National Laboratory**

Dr. John Zachara has performed extensive research on geochemical, biogeochemical, and reactive transport processes that control the concentrations, fate, and transport of organic, metal, and radionuclide contaminants in subsurface environments. The research has ranged from fundamental surface chemical and spectroscopic studies of mineral and microbial suspensions in the laboratory, to comprehensive studies of solute mobilization and transport in the field, including the groundwater-river mixing zone. He has been active in evaluating geochemical interactions that occur in contaminant mixtures and in applying multi-component reaction-based models to contaminant distribution and transport, and microbiologic processes in subsurface systems with complex hydrology. He has made important contributions to understanding how microorganisms interact with mineral surfaces, create new

bio-mineral phases, and regulate a wide variety of geochemical processes. He served as an Associate Director of the Environmental Molecular Sciences Laboratory at the Pacific Northwest National Laboratory (PNNL), and for over the past ten years has been a leader in the planning and performance of fundamental research for the resolution of complex subsurface contamination issues at DOE's Hanford Site. Dr. Zachara is currently a Battelle Fellow and Senior Chief Scientist for Environmental Chemistry in the Fundamental and Computational Sciences Directorate of PNNL. He has authored or co-authored over 175 scholarly publications.

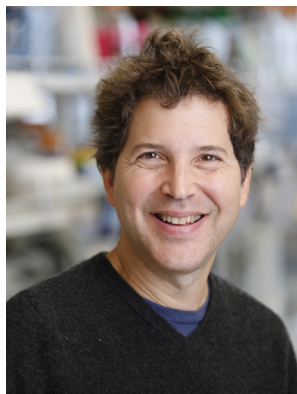
**Address: Translational Science for Health and Disease Barriers and Solutions****Panel Moderator:****Vikram Jandhyala, Vice Provost for Innovation, Executive Director of CoMotion, University of Washington**

Dr. Jandhyala is Vice-Provost for Innovation at the University of Washington. He is Executive Director of CoMotion, UW's collaborative innovation hub. He is a Professor and former Chair in the Department of Electrical Engineering, and an Adjunct Professor in the Information School. Vikram Jandhyala received the BTech in electrical engineering from the Indian Institute of Technology, Delhi in 1989, and the MS and PhD degrees in electrical engineering from the University of Illinois at Urbana-Champaign in 1995 and 1998, respectively. After spending two years in the design automation industry at Ansoft Corporation (acquired by Ansys), he joined UW EE in 2000. His research, which has led to more than 200 papers and several PhD students at top R&D positions has been funded by DARPA,

semiconductor industries, national labs, Department of Defense, Department of Energy, and National Science Foundation, including an NSF CAREER award, and has received awards from UIUC, IEEE, UW, and NASA. He founded, along with his students in 2006, Nimbic, a venture-backed simulation company which was acquired by Mentor Graphics in 2014. He was founding UW director of the UW-PNNL northwest institute for advanced computing (NIAC) from 2012 to 2014. He was chair of the UW EE department from 2011 to 2014, led the UW EE professional master's program as faculty director through early growth in 2009 and 2010, and was an inaugural UW presidential entrepreneurial faculty fellow in 2011. His current interests are in the science and art of innovation, entrepreneurial and design thinking, educational innovation, social and organizational networks, and computational and data science.

**Panelist:**

**David Baker**, Professor of Biochemistry, University of Washington  
Investigator, Howard Hughes Medical Institute



Dr. Baker is a biochemist and computational biologist whose research focuses on the prediction of macromolecular structures and functions. He is the director of the Rosetta Commons, a consortium of labs and researchers that develop the Rosetta biomolecular structure prediction and design program, which has been extended to the distributed computing project Rosetta@Home and the online computer game Foldit. He received his PH.D. in biochemistry at the University of California, Berkeley and did postdoctoral work in biophysics at University of California, San Francisco. Dr. Baker has received numerous awards in recognition of his work, including the AAAS Newcomb Cleveland Prize, the Sackler International Prize in Biophysics, the Overton Prize from the International Society of Computational Biology, and the Feynman Prize from the Foresight Institute. He is a member of the National Academy of Sciences and the American Academy of Sciences.

**Panelist:**

**Tony Blau**, Professor in the Division of Hematology, Department of Medicine and Adjunct Professor in the Department of Genome Sciences, University of Washington (UW)



Dr. Tony Blau, originally from Ohio, was drawn to Seattle because of its legacy as the birthplace of bone marrow transplantation, an intense form of leukemia treatment and the first stem cell therapy. His work focuses on stem cells and on applying personalized approaches to the treatment of cancer. He is Co-Director of the UW's Institute for Stem Cell and Regenerative Medicine and leads the UW's recently created Center for Cancer Innovation. Dr. Blau has served on numerous advisory panels for the National Institutes of Health. He received his medical degree from Ohio State University and completed his residency in internal medicine at Duke University.

**Panelist:**

**Malia Fullerton**, Professor of Bioethics and Humanities, University of Washington.



Dr. Fullerton holds a PhD in population genetics from the University of Oxford, retrained in bioethics at Penn State University with a fellowship from the National Human Genome Research Institute, and now works in close collaboration with genome scientists at the UW and across the United States to explore the ethical, legal, and social implications (ELSI) of genomic research and its clinical translation for public health benefit.



**Panelist:**

**John A. Latham, Ph.D., Chief Scientific Officer, Co-Founder, Alder BioPharmaceuticals**



Dr. Latham has served as Chief Scientific Officer since co-founding Alder BioPharmaceuticals in January 2004. From 1998 to 2004, Dr. Latham served as a director, senior director, and most recently as Vice President of Gene Function and Target Validation for Celltech Group plc. In 1994, Dr. Latham joined Darwin Molecular Corporation, a first-generation gene-to-drug biotechnology company, as a founding director, where he served from 1994 to 1998. Dr. Latham was one of the early scientists hired by Gilead Sciences, Inc., a biopharmaceutical company, and, from 1989 to 1994, he was a member of a core group established to exploit novel oligonucleotide-based technologies. Dr. Latham holds a Ph.D. in Biochemistry from Massachusetts Institute of Technology and a B.S. in Chemistry from Colorado State University.

**Panelist:**

**Maura Little, Washington State Director of Life Science and Global Health Development**



Maura Little was appointed as the Washington State Director of Life Science and Global Health Development in December 2013. As one of seven Sector Leads, Little supports the development and expansion of the life science and global health industry in the state, with a goal to recruit, retain and expand the sector. Little brings 10 years of experience working on policy and community development. During her time as legislative assistant for then Congressman Jay Inslee, she served as point of contact for the Congressman in the state for trade associations, business leaders, government agencies and elected officials. She worked closely with the industry to connect local talent and promote the sector within Congress. After serving on Congressman Inslee's staff, Little served as the Washington State Director of Government Relations for the American Cancer Society Cancer Action Network. There

she worked with the state legislature and Insurance Commissioner to ensure patient access and safety was being addressed during the implementation of the Affordable Care Act. Little has a Bachelor of Science degree from the University of Washington. She currently lives in Seattle with her husband Reeves and son Rudy.