

Michael Wade
Distinguished Professor, Department of Biology

Michael J. Wade, Ph.D., a Distinguished Professor of Biology in the College of Arts and Sciences at Indiana University, is a specialist in theoretical and experimental studies of evolution. He received his undergraduate degree from Boston College in 1971, majoring in mathematics and biology, and was awarded his Ph.D. in theoretical biology by the University of Chicago in 1975. In the same year, Wade was hired as an assistant professor by the University of Chicago, becoming a full professor there in 1986. From 1991 to 1998, he chaired Chicago's Department of Ecology and Evolution. Wade moved to IU Indiana University in Bloomington, Indiana, in 1998. There, he served a three year term as Director of the graduate program in evolution, ecology and behavior, four years as Associate Vice Provost for Faculty and Academic Affairs, and six months as Interim Vice Provost for Research. In 2008, he was elected to the American Academy of Arts & Sciences and, in 2009, he received the Sewall Wright Award from the Society of American Naturalists.



Erik Weitnauer
Research Associate, The Percepts and Concepts Laboratory, Psychological and Brain Sciences

Erik Weitnauer received his PhD in computer science in 2015 from University Bielefeld, Germany. For the last four years, he has been researching and developing education technology at IUB, with the goal to make mathematics more intuitive to learn.



**JOHNSON CENTER
FOR INNOVATION AND
TRANSLATIONAL RESEARCH**

INDIANA UNIVERSITY
College of Arts + Sciences
Bloomington

IUB Innovation Conference

Thursday, April 6, 2017

9:00 am – 6:00 pm

Indiana Memorial Union, Frangipani Room

Biddle Hotel and Conference Center

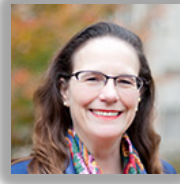
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Welcome

The Johnson Center for Innovation and Translational Research (JCITR) welcomes you to this year's conference that provides an opportunity for IUB faculty and regional industry partners to present their newest research results and exchange ideas on the translation of these new discoveries to solve real-world problems. Highlights of the meeting include presentations by last year's winners of the Translational Research Pilot Grant Program, presentations by Oscar Moralez, Founder & Managing Director, VisionTech, and Lee Arnold, Entrepreneur in Residence, Johnson Center for Innovation and Translational Research, as well as a keynote lecture by Dr. Nick Nikolaidis, and a poster session.

Mission

The mission of the Johnson Center for Innovation and Translational Research is to enhance IUB faculty participation in translational research and the commercialization of research discoveries through interactions with industry partners and the establishment of new companies. The JCITR Discovery Team members focus on establishing a culture that values translational research and implements processes that make it easy and efficient for faculty to participate while continuing to focus on their core strengths in basic research.

Schedule of Events

9:15 Introductory Comments

Keith R. Davis, Director, Johnson Center for Innovation and Translational Research
Fred Cate, IU Vice President for Research

9:30 Lightning Round – I

Novel antimicrobial peptides that can kill antibiotic-resistant Enterobacteriaceae Cheng Kao

Professor, Director Biotechnology, Molecular and Cellular Biochemistry

A tablet-based tool for accurate measurement of hand proprioception after stroke Hannah Block

Assistant Professor, Kinesiology

Graspable Math – Algebra Notation for a Digital World

David Landy, Assistant Professor, Psychological and Brain Sciences & Erik Weitnauer,
Research Associate, Percepts and Concepts Laboratory, Psychological and Brain Sciences

A novel and rational approach to the development of an attenuated chikungunya virus vaccine

Richard Hardy

Professor of Biology, Associate Chair of Teaching, Biology

3-D Face Recognition Technology To Achieve A Low False-Negative Rate

Matt Anderson

Principal Software Research Engineer, Center for Research in Extreme Scale Technologies

10:20 Q&A

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scientist at Yahoo Research, Fellow of the Institute for Scientific Interchange Foundation in Torino, Italy, Fellow-at-large of the Santa Fe Institute, and on the Senior Leadership Team of the IU Network Science Institute. He has been the recipient of Fulbright, Rotary Foundation, and NATO fellowships, and a Career Award from the National Science Foundation. His research, supported by the NSF, DARPA, and the McDonnell Foundation, focuses on Web and data science, social network analysis, social computation, Web mining, and modeling of complex information networks. His work on the spread of information and misinformation in social media has been covered in many US and international news sources, including The New York Times, Wall Street Journal, Washington Post, NPR, PBS, CNN, BBC, Economist, Guardian, Atlantic, Reuters, Science, and Nature. Menczer received multiple service awards from the ACM and currently serves as associate editor of the Network Science journal and on the editorial boards of EPJ Data Science and PeerJ Computer Science.



Oscar Moralez

Founder & Managing Director, VisionTech

Oscar Moralez is a serial entrepreneur and angel investor who resides in the Indianapolis, Indiana area. Oscar is managing director of VisionTech Partners, co-manager of VisionTech Angels and co-manager of the VisionTech Angel Fund. VisionTech Partners is a management consulting company that provides management consulting services for early stage technology companies. In 2009, he co-founded StepStone Angels, which became VisionTech Angels in 2014, and is a statewide angel-investing group composed of local chapters of accredited investors that invest their capital, time, and experience toward helping high growth, high potential, early stage technology companies in the Midwest.

In 2002, Oscar founded BioStorage Technologies in Indianapolis, which was acquired in December 2015 by Brooks Automation (NASDAQ: BRKS). At BioStorage, he served as chief operating officer and managing director for the European operation until his departure in 2007. Prior to BioStorage, Oscar worked in various management roles with Covance, Mayo Medical Laboratories and Boulder Community Hospital.

Oscar's background includes more than 20 years of technical, operations, and management experience in healthcare and life sciences sectors. Today, he serves on the board of directors of Apricity, OrthoPediatrics and SonarMed, as well as on the not-for-profit boards of the Venture Club of Indiana and the Speak Easy in Indianapolis. Oscar earned a BS in Medical Technology from the University of Texas, Southwestern Medical Center at Dallas and an MBA from the University of Colorado in Denver.

Nick Nikolaidis

Executive Director of University of Cincinnati Skin Science & Technology Collaborative, Entrepreneur-in-Residence at the University of Cincinnati

Nick Nikolaidis received his Ph.D. in Synthetic Organic & Bioorganic Chemistry from Cornell University in 1989. Following a Postdoctoral Fellowship at The Johns Hopkins University, Dr. Nikolaidis joined 3M Pharmaceuticals, where he significantly contributed to the design, synthesis, and development of antiviral agents, leading to the commercialization of Aldara. In 1994, Nikolaidis joined Procter & Gamble Pharmaceuticals where he led and contributed to the drug discovery pipeline in the cardiovascular, upper respiratory, musculoskeletal, and obesity therapeutic categories, leading to numerous clinical candidates; launched a Pre-Clinical Chemical Development group targeting the scale-up of small molecule, peptide, and biologic APIs; and established a Competitive & Technical Intelligence function. Upon divestiture of P&G's pharmaceutical business, he headed P&G's open innovation model, "Connect + Develop", across the university and research institute landscape until his retirement in 2015. During his time leading P&G's university research effort, he successfully executed state-wide master research agreements in both Ohio and Michigan, significantly growing the research portfolios at both the Universities of Michigan and Cincinnati, and served on the Board of Directors for the National Academies' University-Industry Demonstration Partnership as an Industry Director. Post-P&G, he is Founder and President of the N Squared Consulting Group, LLC, a management and technology consulting company that enables more robust public-private partnerships, is an Entrepreneur-in-Residence with the University of Cincinnati Technology Commercialization Accelerator, and more recently is Executive Director of the University of Cincinnati Skin Science & Technology Collaborative.



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Jorge Jose

James H. Rudy Distinguished Professor, Department of Physics

Dr. Jose is the James H. Rudy Professor of Physics, a member of the Stark Neuroscience Institute, and Adjunct Professor of Integrative and Cellular Physiology. He is trained as a theoretical physicist but within the last 15 years has been working in theoretical neuroscience and precision psychiatry. He did his PhD thesis at Brown University, was a Research Assistant Professor at Brown, was the first James Frank Fel at Rutgers before joining Northeastern University becoming the Matthews University Distinguished Professor. He has authored over 180 publications. He is a Fellow of the American Physical Society; Corresponding Member of the Mexican National Academy of Sciences; Fellow of the American Association for the Advancement of Science. Chercheur Étranger D'haut

niveau et de Renomme International in 2002 frome gouvernement de France. In 2016 he received the Chinese Academy of Sciences President's International Fellowship award. His research is presently funded by the NSF.

Cheng Kao

Professor, Director Biotechnology, Molecular and Cellular Biochemistry

Dr. Cheng Kao has a passion to make basic discoveries and to apply the discoveries toward new products. His primary scientific training is in the area of transcription and the regulation of gene expression. To better understand gene regulation, he has worked on a large number of systems that include bacteria, viruses, plants and mammals. He has developed nucleotide analogs that are used for single molecule DNA sequencing that is currently used for the sequencing of the human genome. Dr. Kao's lab work on viral replication has also defined the steps where pharmaceutical companies have developed antivirals, especially inhibitors of the hepatitis C virus. In 2005, the lab expanded into the area of innate immune receptors in order to more completely understand how viral RNA replication products are recognized and, hopefully, eliminated.



David Landy

Assistant Professor, Psychological and Brain Sciences

David Landy earned his Bachelor's degree from Alma College with majors in math, physics, and computer science. After a brief stint working at the National Solar Observatory, he turned to cognitive science and the study of mathematical reasoning, focusing on how people learn to use mathematical notations to support abstract thought. He earned a Ph.D. in Cognitive Science and Computer Science in 2007, and rejoined the faculty in 2013 as a professor in Cognitive Science and the Department of Psychological and Brain Sciences. He has received several awards, including the New Investigator Award of the psychonomic society and the David Marr prize, and descriptions of his work on the psychology of large numbers has appeared in numerous popular outlets, including the Nautilus, the children's science magazine Science & Vie, and the Wall Street Journal.

Fil Menczer

Professor, Center for Complex Networks and Systems Research, School of Informatics and Computer Science

Filippo Menczer is a professor of informatics and computer science at Indiana University, Bloomington, with courtesy appointments in cognitive science and physics. He holds a Laurea in Physics from the Sapienza University of Rome and a Ph.D. in Computer Science and Cognitive Science from the University of California, San Diego. Dr. Menczer is an ACM Distinguished Scientist and a Senior Research Fellow of The Kinsey Institute. He previously served as division chair in the IUB School of Informatics and Computing, director of the Center for Complex Networks and Systems Research, visiting



10:35 Maps & Macroscopes: Envisioning Science, Technology, and Education

Katy Borner

Victor H. Yngve Distinguished Professor of Information Science, Department of Intelligent Systems Engineering and the Department of Information and Library Science, School of Informatics and Computing

11:15 Break

11:30 The Virtual Reality of Evolving Biotech

Lee Arnold

Entrepreneur in Residence, Johnson Center for Innovation and Translational Research

12:25 Patent Awards Presentation, Lunch Break & Networking

1:40 Lightning Round – II

High resolution indoor positioning for educational research and beyond

Joshua Danish

Associate Professor, School of Education

Engineering Population Collapse

Mike Wade

Distinguished Professor, Department of Biology

App development to implement IURTC-Rutgers patent application for Autism biomarkers

Jorge Jose

James H. Rudy Distinguished Professor, Department of Physics

The Rise of Social Bots

Fil Menczer

Professor, Center for Complex Networks and Systems Research, School of Informatics and Computer Science

2:20 Q&A

2:35 Break

2:45 An Angel Investor Overview – Important Things You Need To Know To Help You Raise Capital

Oscar Moralez

Founder & Managing Director, VisionTech

3:15 Mind the Gap - Musings on the University-Industry Translational Research Funding Gap

Nick Nikolaidis

Executive Director of University of Cincinnati Skin Science & Technology Collaborative, Entrepreneur-in-Residence at the University of Cincinnati

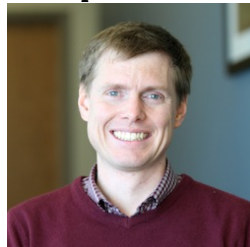
3:55 Adjourn formal presentations to poster session in the Georgian Room

4:00 Poster Presentations include faculty, students, and industry partners & Cocktail Reception

About the Presenters

Matt Anderson

Principal Software Research Engineer, Center for Research in Extreme Scale Technologies



Dr. Matthew Anderson has worked at the intersection of high performance computing and computational science for thirteen years and has been using a dynamic execution model for application development. He has developed several asynchronous implementations of adaptive mesh refinement and adaptive multiresolution representations for solving systems of partial differential equations in physical systems with multiple temporal and spatial resolution scales. His current work involves simulating binary neutron star mergers in astrophysics and developing a series of asynchronous density functional theory applications for predicting superalloys in materials science. He received his PhD from The University of Texas at Austin in 2004.

Lee Arnold

Entrepreneur in Residence, The Johnson Center for Innovation and Translational Research

Dr. Lee Arnold is an energetic, creative scientific leader with 30 years of accomplishments in molecularly-targeted drug discovery, including the invention of Tarceva® (erlotinib) - the first EGFR inhibitor demonstrated to improve survival in lung cancer patients. He has played an integral role in delivering seven additional innovative IND-track drug candidates into development in oncology and virology, with co-inventive contributions in six, with four currently in clinical trials.

He has an extensive history in multidisciplinary drug discovery project leadership and management in both multi-site matrix pharma & virtual biotech organizations. His oversight has spanned target validation, assay development, high throughput & virtual screening, synthetic & medicinal chemistry, structure-based drug design, parallel synthesis & purification, lead identification & optimization, pharmacology, PK/ADME, metabolite ID, pharmacodynamics, Toxicology, Safety Pharmacology, biomarker identification, and intellectual property strategies. Additionally, he has broad experience managing the outsourcing of Discovery and Development activities including HTS, synthesis, bioassays, PK-ADMET, Process R&D, Formulation and GLP & GMP Manufacturing.

Dr. Arnold has been recognized for numerous patents, peer-reviewed publications, and presentations. He is a versatile medicinal chemist with exceptionally broad hands-on research training also including enzymology, biochemistry, biophysics, cell biology, drug metabolism. He has in depth knowledge of contemporary oncology and virology targets, with keen insights on competitive situation and current chemical matter as well as being seasoned in pharma business, product, and technology opportunity assessments.

His research experience includes positions as Chief Scientific Officer/Chief Discovery Officer, Assembly Biosciences, Inc.; Vice-President & Chief Scientific Officer, Coferon, Inc.; Chief Scientific Officer, Kinagen, Inc.; Vice President, Cancer Chemistry and Discovery Technologies, OSI Pharmaceuticals, Inc.; Vice President, US Research, OSI Oncology; Senior Principal Scientist /Project Team Leader, Abbott Bioresearch Center; Group Leader, Chemistry/ Angiogenesis Project Team Leader, BASF Bioresearch Corporation; and Senior Research Investigator, Oncology Medicinal Chemistry, Central Research Division, Pfizer Inc.. He is currently President & CEO, DiscoverElucidations, LLC, and Entrepreneur-in Residence with Johnson Center for Innovation and Translational Research with a focus on assisting biotech start-ups.



Hannah Block

Assistant Professor, Department of Kinesiology

Dr. Block is an assistant professor in the Department of Kinesiology (School of Public Health) at Indiana University. She completed her PhD and postdoctoral training at the Johns Hopkins School of Medicine before joining the IU faculty in 2013. Her research uses human behavioral and neurophysiological techniques, focusing on the role of sensory perception in the control of movement.



Katy Börner

Victor H. Yngve Distinguished Professor of Information Science, Department of Intelligent Systems Engineering and the Department of Information and Library Science, School of Informatics and Computing

Katy Börner is the Victor H. Yngve Distinguished Professor of Information Science in the Department of Intelligent Systems Engineering and the Department of Information and Library Science, School of Informatics and Computing, Adjunct Professor at the Department of Statistics in the College of Arts and Sciences, Core Faculty of Cognitive Science, Member of the Advanced Visualization Laboratory, Founding Director of the Cyberinfrastructure for Network Science Center at Indiana University, Bloomington, IN, Visiting Professor at the

Royal Netherlands Academy of Arts and Sciences (KNAW) in The Netherlands, and Visiting Professor and Mercator Fellow, Department of Computer Science and Applied Cognitive Science, University of Duisburg-Essen, Germany. She is a curator of the international Places & Spaces: Mapping Science exhibit and the author of the Atlas of Knowledge and Atlas of Science (MIT Press). She holds a MS in Electrical Engineering from the University of Technology in Leipzig, 1991 and a Ph.D. in Computer Science from the University of Kaiserslautern, 1997. She is a member of ACM and IEEE. In 2012, she became an American Association for the Advancement of Science (AAAS) Fellow.

Joshua Danish

Associate Professor, School of Education

Joshua Danish is an Associate Professor in the Learning Sciences at the IU Bloomington School of Education. The overarching theme in his program of research is an examination of how people learn through activity. Learning through activity involves interacting with other people, physical objects, and ideas. Physical objects can range from actual flowers and drawings that label their parts to computer simulations. Similarly, ideas include individual beliefs and preferences, the rules that groups such as classrooms follow, and historically developed concepts that span generations. His research examines how individuals coordinate their actions and ideas within these complex settings, and how this can lead to learning.



Richard Hardy

Professor of Biology, Associate Chair of Teaching, Biology

Professor of Biology. Dr. Hardy obtained his Ph.D. from the University of Alabama at Birmingham in 1997 having studied the molecular biology of respiratory syncytial virus replication with Gail Wertz. He joined the faculty at IU in 2002 following a post-doctoral fellowship with Charlie Rice at Washington University, St. Louis, where he had worked on basic mechanisms of alphavirus genome replication. Currently his lab has two NIH-funded research foci; examination of virus-host interactions required for early viral gene expression, and interactions between the virus and the mosquito vector that impact the efficiency of viral transmission.