“To his research, Bill brought powerful experimental skills, ingenuity in experimental design and analysis, a strong sense for theoretical relevance and implications of experimental findings, and a generosity of spirit that made working with him immensely pleasurable and rewarding.”

--Herbert A. Simon

Travel Fellows
We are pleased to welcome the following early-career scientists whose research focuses on expertise and its acquisition:

Walter R. Boot
Brian Gane
Amy J. Haufler
Lin Lin
Brooke Macnamara
Karuthiga Nandagopal
Jonathan T. Shemwell
Stephanie Touchman
Paul Ward

Admission to this event is free and open to everyone interested. Symposium sessions will be held in:

The Adamson Wing, Baker Hall 136A (on Frew Street)

Carnegie Mellon University
Pittsburgh, Pennsylvania
http://www.psy.cmu.edu/chasesymposium

Funding for this symposium was generously provided by
U. S. Army Research Laboratory and The National Science Foundation

36th Carnegie Symposium on Cognition

Expertise and Skill Acquisition:
The Impact of William G. Chase

J. R. Anderson, M. A. Just,
R. S. Siegler, & J. J. Staszewski, Organizers

June 2-3, 2009

Investigating Expertise and its Development through the Study of...

• Expert Performance and Skill Acquisition •
• Expertise, Skill, and Education •
• Neural and Biological Foundations •
EXPERTISE AND SKILL ACQUISITION

Wednesday, June 3, 2009
8:30 Continental Breakfast
9:00 Contributions of Automaticity and Deliberate Practice to the Acquisition of Expertise
K. Anders Ericsson
9:45 Discussant's Remarks
Kenneth Kotovsky
10:15 Break
10:45 Genetic and Neurocognitive Foundations of Expertise
Michael I. Posner
11:30 Acquisition of Visual Skill through Video Games
Daphne Bavelier
12:15 Lunch
1:30 Attentional and Memory Processes in Expert and Novice Motor Skill Performance
Sian L. Beilock
2:15 Using Neural Imaging to Investigate Learning in an Educational Task
John R. Anderson
3:00 Discussant's Remarks
Marcel Just
3:30 Closing

The Impact of William G. Chase

Tuesday, June 2, 2009
8:15 Continental Breakfast
8:45 Welcome and Overview
Jim Staszewski
9:00 What do George Miller, Harry Harlow, Barbel Inhelder, David Premack, David Rumelhart, B. F. Skinner, and Bill Chase have in common?
David Klahr
9:15 Expert Learners
Michelene Chi and Stephanie Touchman
10:00 Cognitive Engineering Based on Expert Skill
Jim Staszewski
10:45 Break
11:00 Positioning Novices as Relative Experts: Building a Path Towards Expertise
Catherine Chase
11:45 Life-Span Development of Expertise
Neil H. Charness
12:30 Lunch
1:45 Discussant's Remarks
Robert S. Siegler
2:15 Chunks and Templates in Semantic Long-term Memory
Fernand Gobet
3:00 Paths to Discovery
Roger Schvaneveldt
3:45 Break
4:00 Development of Expertise and the Control of Physical Actions
David Rosenbaum
4:45 Expert Memory Videos

Dr. John R. Anderson's work focuses on developing a unified computational theory of mind that integrates cognitive and brain mechanisms and guides instructional applications. He is the Richard King Mellon Professor of Psychology and Computer Science at Carnegie Mellon.

Dr. Daphne Bavelier studies visual cognition and brain plasticity focusing on how previous experiences promote plasticity and learning of cognitive skills. She is an Associate Professor of Brain & Cognitive Sciences and Imaging Science at the University of Rochester.

Dr. Sian L. Beilock investigates cognitive processes governing performance in complex sensorimotor skills across different domains, environments, and levels of expertise and how stressful situations affect attentional processes and memory structures. She is an Associate Professor at The University of Chicago.

Dr. Neil H. Charness' research focuses on aging and expertise, studying how acquired skill may compensate for age-related declines in cognitive efficiency and to design technology for older adults. He is the William G. Chase Professor of Psychology at Florida State University.

Dr. Michelene Chi studies misconceptions and conceptual change, ways of teaching emergent processes in science, and understanding effective ways of learning from self-explaining, tutoring, collaborating, and observing learning dialogues. She is a Professor of Psychology in Education at Arizona State University.

Dr. Fernand Gobet uses behavioral methods and simulation modeling to understand the mechanisms underlying the acquisition of expertise and their implications for instructional methods. He is a Professor of Cognitive Psychology at Brunel University.

Dr. K. Anders Ericsson investigates the structure and acquisition of expert performance, particularly how expert performers acquire and maintain their superior performance by extended deliberate practice. He is the Conrad Eminent Scholar and Professor of Psychology at Florida State University.

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Dr. David Klahr studies processes supporting children's understanding of scientific thinking through basic research and applied studies aimed at improving elementary school science instruction. He holds the Walter van Dyke Bingham Chair of Cognitive Development and Education Sciences at Carnegie Mellon.

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Dr. Kenneth Kotovsky studies human problem solving, investigating the mental representations and processing involved, sources of problem difficulty, non-conscious processes in problem solving and engineering design from a problem-solving perspective. He is a Professor at Carnegie Mellon University.

Dr. Daphne Bavelier studies visual cognition and brain plasticity focusing on how previous experiences promote plasticity and learning of cognitive skills. She is an Associate Professor of Brain & Cognitive Sciences and Imaging Science at the University of Rochester.

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Dr. Michael I. Posner uses behavioral and imaging methods to understand selective attention and executive control of cognition. His work comprehensively examines underlying neural mechanisms and structures at levels including anatomy, circuitry, development, and genetics. He is Professor Emeritus at the University of Oregon.

Dr. Dr. James Staszewski conducts use-inspired studies of expertise to develop cognitive models of expert skills that are useful as blueprints for designing training in high-stakes task domains. He is a Research Professor at Carnegie Mellon.

Dr. David Rosenbaum studies the cognitive substrates of skilled performance, especially those underlying human motor control and perceptual-motor integration related to planning and control of voluntary movements. He is a Distinguished Professor of Psychology at the Pennsylvania State University.

Dr. Roger Schvaneveldt's interests in cognitive psychology and its applications span aviation psychology, pilot training and assessment, abductive reasoning, and computational methods for analysis of proximity data. He is a Professor of Applied Psychology at Arizona State University Polytechnic and President of Interlink.

Dr. Robert S. Siegler's research focuses on the growth during childhood of problem solving and reasoning. Particular interests are strategy choices, long-term learning, and educational applications of cognitive-developmental theory. He is the Theresa Heinz Professor of Cognitive Psychology at Carnegie Mellon.

Dr. Fernand Gobet uses behavioral methods and simulation modeling to understand the mechanisms underlying the acquisition of expertise and their implications for instructional methods. He is a Professor of Cognitive Psychology at Brunel University.