Agenda Item 4

Innovative Approaches to Technology Transfer and Collaborative Research – Dr. Ben Shneiderman
TOPIC: Innovative Approaches to Technology Transfer and Collaborative Research – Dr. Ben Shneiderman (information item)

COMMITTEE: Economic Development and Technology Commercialization

DATE OF COMMITTEE MEETING: January 28, 2016

SUMMARY: Dr. Ben Shneiderman will discuss guiding principles and strategies to nurture collaborations and catalyze innovation. He will also present the ideas in his forthcoming book that explore the multiplicative impact of collaborations and organizational partnerships as well as how contemporary research teams get a further boost from fresh ways of using the Web, social media, and visual communications tools that amplify collaborations.

Dr. Shneiderman is a Distinguished University Professor in the Department of Computer at the University of Maryland, College Park and the Founding Director of the Human-Computer Interaction Laboratory.

ALTERNATIVE(S): This item is for information purposes.

FISCAL IMPACT: This item is for information purposes.

CHANCELLOR’S RECOMMENDATION: This item is for information purposes.

COMMITTEE RECOMMENDATION: DATE:

BOARD ACTION: DATE:

SUBMITTED BY: Joseph F. Vivona (301) 445-2783
Committee on Economic Development and Technology Commercialization

Innovative Approaches to Technology Transfer and Collaborative Research – Dr. Ben Shneiderman

January 28, 2016
The New ABCs of Research

Ben Shneiderman  ben@cs.umd.edu @benbendc

Distinguished University Professor,
Dept of Computer Science
Founding Director (1983-2000),
Human-Computer Interaction Lab
Member, Institute for Advanced Computer Studies

Photo: BK Adams
The New ABCs of Research (Oxford, 2016)

Guide for
Junior researchers

Manifesto for
Senior researchers
Academic administrators
Business leaders
Funding agencies

www.cs.umd.edu/hcil/newabcs
The New ABCs of Research

Context

Guiding Principles

Lifecycle Strategies

New Knowledge

Immense Problems
The New ABCs of Research

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New Technologies
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Immense Problems

New Technologies

Raised Ambitions
Combining applied with basic research produces more rapid progress in both
Blending Science, Engineering & Design produces higher-impact research
The New ABCs of Research

Context

- Immense Problems
- New Technologies
- Raised Ambitions

Guiding Principles

- Applied & Basic Combined

Lifecycle Strategies

- Science, Engineering & Design

New Knowledge
The New ABCs of Research

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- Immense Problems
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Guiding Principles
- Applied & Basic Combined
- Science, Engineering & Design

Lifecycle Strategies
- Choose actionable problems: civic, business & global priorities
- Apply observation, intervention & controlled experiments
- Form teams with diverse individuals & organizations
- Test ideas & prototypes with realistic interventions
- Promote adoption & assess impact

New Knowledge
The New ABCs of Research

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Immense Problems

New Technologies

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Lifecycle Strategies

Choose actionable problems: civic, business & global priorities

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New Knowledge

Solutions

Theories
The New ABCs of Research (Oxford, 2016)

- Guide for junior researchers
- Manifesto for
  - Senior researchers
  - Academic administrators
  - Business leaders
  - Funding agencies

www.cs.umd.edu/hcil/newabcs
The New ABCs of Research
Achieving Breakthrough Collaborations
Ben Shneiderman

“It’s excellent... a critically important research manifesto in the spirit of Vannevar Bush’s (1945) Science: The Endless Frontier.”
—Rita Colwell, Director, U.S. National Science Foundation (1998-2004)

“This is a must-read book for those of us that want to create radical innovations and breakthrough scientific advances to solve the ‘wicked’ problems surrounding us in the 21st Century.”
—John Seely Brown, Former Chief Scientist, Xerox Corporation and Director of its Palo Alto Research Center (Xerox PARC)

“I absolutely love it all! The New ABCs of Research captures, catalogues and advocates for exactly what we need to be doing in research and scholarship at a major research university. It beautifully describes the combination of basic, interdisciplinary, and translational research with partners that is so powerful and so needed.”
—Mary Ann Rankin, Provost, University of Maryland

The problems of the 21st century require innovative thinking from students, academics, business researchers, or government policy makers. Hopes for improving our healthcare, food supply, community safety, and environmental sustainability depend on the pervasive application of research solutions.

The research heroes who take on the immense problems of our time face bigger than ever challenges, but if they adopt potent guiding principles and effective research lifecycle strategies, they can produce the advances that will enhance the lives of many people. These inspirational research leaders will break free from traditional thinking, disciplinary boundaries, and narrow aspirations. They will be bold innovators and engaged collaborators, who are ready to lead, yet open to new ideas; and they will be self-confident, yet empathetic to others.

In this book, Ben Shneiderman recognizes the unbounded nature of human creativity, the multiplicative power of teamwork, and the catalytic effects of innovation. He reports on the growing number of initiatives to promote more integrated approaches to research so as to promote the expansion of these efforts. It is meant as a guide to students and junior researchers, as well as a manifesto for senior researchers and policy makers, challenging widely-held beliefs about how applied innovations evolve and how basic breakthroughs are made, and to help plotting the course toward tomorrow’s great advancements.

Ben Shneiderman is a Distinguished University Professor in the Department of Computer Science and Founding Director (1983-2000) of the Human-Computer Interaction Laboratory at the University of Maryland.