

ANNUAL REPORT

2016-2017





A MESSAGE FROM THE EXECUTIVE DIRECTOR

The Institute for Business and Information Technology (IBIT) continues to excel in academic-industry engagement. This annual report summarizes how IBIT integrates industry perspectives with academic expertise in partnership with its corporate members.

2016-17 highlights include starting the small-company membership model with inaugural members **Arcweb Technologies** and **DecisivEdge**. It is also a pleasure to welcome **Scholastic, Inc.** as a new full IBIT member. Additionally, the combined MIS and IBIT Fox IT advisory board gained **Todd Sprinkle**, CIO of QVC, **Chris Cera**, CEO of Arcweb Technologies, and **Sukumar Narayanan**, President of DecisivEdge, as new members. Under the leadership of Chairman **Bruce Fadem**, the Fox IT advisory board has continued to support MIS students with close to \$100,000 in scholarships awarded in 2016-17. It is also exciting to welcome **Michael Bradshaw**, EVP & CIO of NBCUniversal, and **Dale Danilewitz**, EVP & CIO of AmerisourceBergen, to the Executive-in-Residence program.

The Fourth Annual Temple University Alexion Analytics Challenge broke participation records and featured a keynote speech by **George Llado**, SVP and ClO of Alexion, while the national AmerisourceBergen Analytics Challenge attracted entries from more than 20 universities across the country. Our symposium "Digital Leadership: The Future for ClOs" featured Fox alum **Rich Brennen**, North American ClO Practice Leader and Partner at Spencer Stuart, as the moderator; other distinguished speakers and senior executive participants broke new ground outlining the role of the next generation of ClOs.

As cyber-security threats multiply, analysis, identification and remediation are becoming more critical than just playing defense. The Second Annual National Cyber Analyst Challenge and Conference powered by Leidos and organized by IBIT continued its focus on developing cyber analysts.

Finally, thanks are due to Fox IT advisory board member **Andrea Anania** for endowing a \$100,000 scholarship to MIS.

We look forward to even better results this coming year.

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Munir Mandviwalla

Executive Director

Institute for Business and Information Technology

FOX IT ADVISORY BOARD

The advisory board—composed of IT industry leaders—guides Temple University's Fox School of Business in its mission to strengthen both its curriculum and its international reputation.



The Fox IT advisory board is chaired by **Bruce Fadem**, retired VP and CIO for Wyeth, and managed by IBIT. The board's mission is to advise the Fox School—including the Fox School's MIS department and IBIT—in realizing its vision of becoming an internationally ranked premier provider of integrative business and technology education and research. Board members meet tri-annually to focus on the following goals and responsibilities:

Education + Research + Promotion of the School Development + Professional Development + Careers



Paul Amorello Vice President Global IT Services & CIO Campbell Soup

Company



Andrea Anania Retired VP & CIO CIGNA



Atish Banerjea CIO Facebook



Michael Bradshaw EVP & CIO NBCUniversal



Jonathan A. Brassington Founding Partner, CEO LiquidHub Inc.



Cera
CEO
Arcweb Technologies



Dale
Danilewitz
EVP & CIO
AmerisourceBergen



Dinesh Desai Chairman & CEO Emtec, Inc.



Larry Dignan Editor-in-Chief ZDnet



Jeff Hamilton SVP Business Technology Pfizer



George Llado SVP & CIO Alexion



Sukumar Narayanan President DecisivEdge, LLC.



Niraj Patel CIO Lending Platforms, IBM



Kent Seinfeld Retired SVP & CIO Commerce Bank



Joseph Spagnoletti VP & CIO U.S. LBM



Todd Sprinkle CIO QVC, Inc.



Indicates New Member in 2016-2017

2016-2017 ATA GLANCE

BY THE NUMBERS

3 NEW MEMBERS JOINED IBIT

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WELCOMED
2 NEW
EXECUTIVES
IN RESIDENCE

10 CONTINUING MEMBERS

PAGE 7

PAGE 9

THE FOX IT ADVISORY
BOARD HELD
3 MEETINGS
THROUGHOUT THE
YEAR ON KEY TOPICS

A RECORD-BREAKING 375 PEOPLE
ATTENDED THE 2016 IT AWARDS

PAGE 12

NEARLY \$100,000 OF SCHOLARSHIPS
AWARDED TO STUDENTS

PAGE 13

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MORE THAN **80 INDUSTRY PROFESSIONALS** ATTENDED

THE SYMPOSIUM ON DIGITAL LEADERSHIP

PAGE 14

THE 4TH ANNUAL IT
CAREER FAIR
FEATURED MORE THAN
30 FIRMS

PAGE 15

MORE THAN **400 STUDENTS** PARTICIPATED IN THE 4TH ANNUAL TEMPLE UNIVERSITY ALEXION ANALYTICS CHALLENGE

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2ND NATIONAL CYBER ANALYST CHALLENGE DEVELOPED EXPERTISE IN RISK ANALYSIS & THREAT IDENTIFICATION

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22 UNIVERSITIES PARTICIPATED IN THE NATIONAL AMERISOURCEBERGEN ANALYTICS CHALLENGE

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THE MENTORSHIP PROGRAM MATCHED 36 INDUSTRY EXECUTIVES TO MIS STUDENT PROJECTS

PAGE 18



IBIT MEMBERS

IBIT membership offers participating corporations the opportunity to leverage our knowledge, human capital, relationships and established network. Membership benefits include:

- **Featured roles** at major events such as the upcoming symposium, "The Practical Path Forward Cognitive Computing, AI, and Analytics"
- + Sponsorship opportunities for the Temple Analytics Challenge, National Analytics Challenge, Cyber Analyst Challenge and other special projects, such as the national Information Systems Job Index
- + Customized corporate education and professional training programs
- + Featured spaces at the Fox IT Career Fair and customized assistance with recruiting, including special events
- **+ Working with world-class faculty** on research projects or commissioning student projects that leverage the insights of the digital generation
- + Leveraging The IBIT Report a white-paper publication on relevant topics and commissioning specific IBIT Reports on topics of mutual interest
- Professional development opportunities, including speaking in classes, attending conferences and participating in curriculum design
- + Mentoring MIS students as part of the IBIT Mentoring program
- Visibility on campus and in the profession members are showcased in all print and web material
- + Select executives are invited to serve as Executives-in-Residence; select qualified individuals are invited to serve on the Fox IT advisory board
- Presenting named scholarships to the nationally ranked students of the Fox School's MIS department
- + Featured roles at the Fox IT Awards, an annual celebration and evening of recognition

IBIT offers full membership for large and medium-sized firms, as well as a special program for small firms. Learn more at ibit.temple.edu/ibitmembers

WELCOMING NEW MEMBERS

We are pleased to have gained the following companies as IBIT members and partners in integrating cutting-edge industry perspectives with the academic expertise at the Fox School of Business.



SCHOLASTIC, INC.

A multinational publishing, education and media company, Scholastic reported revenue of \$672.8 million in 2016 and employs roughly 10,000 people.



ARCWEB TECHNOLOGIES

Philadelphia-based Arcweb Technologies is a digital product-development company focused on the finance and healthcare industries.



DECISIVEDGE, LLC

DecisivEdge, LLC, based in Newark, Delaware, is a business-consulting and technology services firm.

CONTINUING MEMBERS

IBIT members are educating the next generation of industry leaders and creating the forums for generating best practices in information technology.





NEW INITIATIVE ENGAGES SMALLER COMPANIES

IBIT at Temple University's Fox School of Business has launched a new initiative to engage small, innovative companies.

Arcweb Technologies and DecisivEdge, LLC have been invited as the introductory members of IBIT's Small Company Membership Program, which aims to engage smaller firms with current members of IBIT.

"The Small Company Membership Program will create a more diverse, better-rounded membership comprising businesses of all sizes across multiple industries", said Dr. Munir Mandviwalla, Executive Director.

Additionally, IBIT announced **Chris Cera**, CEO of Arcweb Technologies, and **Sukumar Narayanan**, President of DecisivEdge, as new members of the Fox IT advisory board. The board, which is comprised of top IT industry

leaders, guides the Fox School in its mission of strengthening its curriculum and reputation as a nationally ranked provider of integrative business and technology education and research.

Philadelphia-based Arcweb Technologies is a digital product-development company focused on the finance and healthcare industries. DecisivEdge, LLC, based in Newark, Delaware, is a business-consulting and technology services firm.





EXECUTIVES IN RESIDENCE

The IBIT Executive in Residence program facilitates mutually beneficial engagement and collaboration between select industry leaders and Fox School of Business students and faculty.

Year of 2017 Appointment



Michael Bradshaw EVP & CIO NBCUniversal

Year of 2016 Appointment



Dale DanilewitzEVP & CIO **AmerisourceBergen**

Year of 2015
Appointment



Atish Banerjea CIO Facebook

Year of **2014** Appointment



Ben Hasan Senior Vice President **Walmart**

Year of 2013
Appointment



Matt Pammer VP - Global Commercial IT AstraZeneca

Year of 2012
Appointment



Joseph C. Spagnoletti Vice President & CIO U.S. LBM

Year of 2011
Appointment



Niraj Patel
CIO - Lending Platforms
IBM

Year of Appointment 2010



Sondra L. Barbour Member of Board of Directors 3M

2016-2017 BOARD MEETING TOPICS

The Fox IT advisory board held three meetings during the year, covering a wide range of subjects including:

- + The new IBIT Small Company Membership model
- + MIS computing needs
- + IT scholarship program
- + MIS Capstone

- Digital Innovation Foundry
- National Cyber Analyst Challenge and Conference
- + The new Analytics symposium



IBIT IMPACT

Students and faculty at Temple University's Fox School of Business as well as experienced IT professionals benefit from the latest industry insights, standard-setting forums and valuable connections that IBIT facilitates.

The long-ranging impact of IBIT extends beyond simple professional networking between students, faculty and industry leaders. IBIT is also supporting promising students with awards and scholarships. It's hosting national academic competitions and annual career fairs. It's organizing symposiums that facilitate and disseminate helpful industry insights to students and professionals alike. In short? IBIT is sustaining and advancing excellence in information technology.

Through the integration of from-the-field knowledge from industry professionals and with the academic research prowess of the Fox School of Business, IBIT bolsters the development of IT best practices while fostering a new, well-trained generation of tech professionals. IBIT draws from the faculty and students of MIS, the expertise of the entire Fox and Temple University community, and some of the most innovative corporations in the world.

You can see the ways IBIT is continually impacting students, faculty and IT executives at **ibit.temple.edu**.



ANNUAL IT AWARDS

Congratulations to the winners of the Leader, Innovator and Distinguished Alumni awards, chosen by a committee of Fox leaders and previous honorees for their remarkable accomplishments in information technology.



FOX IT LEADER AWARD

Recognizing leadership in the use and development of IT in business

Michael Bradshaw

Executive Vice President & Chief Information Officer NBCUniversal



FOX IT INNOVATOR AWARD

Recognizing innovation in applying IT to create business opportunity

Ned Moore

Co-founder, Chairman & Chief Executive Officer Clutch



FOX IT AWARD FOR DISTINGUISHED ALUMNI

Recognizing a distinguished career in IT and a contribution to the community, industry or Temple University

Satbir Bedi

Chief Technology Officer
Scholastic Corporation

BREAKING RECORDS IN 2016, WE HAD THE LARGEST ATTENDANCE EVER AT THE ANNUAL IT AWARDS RECEPTION WITH A RECORD-BREAKING

375 ATTENDEES.

SCHOLARSHIPS

Every year, IBIT—along with several corporate partners—offers support and encouragement to promising students with a series of scholarships. Winners are celebrated at the Annual Fox IT Awards Reception.

FOX IT ADVISORY BOARD SCHOLARSHIP

The Fox IT Advisory Board Scholarship recognizes exceptional Management Information Systems (MIS) students with **\$5,000 tuition scholarships**. Students must excel academically with a cumulative GPA of 3.7 or higher and must impress the committee with their potential for achievement and accomplishment, shown through an essay and letter of recommendation from a Temple faculty member or administrator.



IBIT CORPORATE SCHOLARSHIPS

The IBIT Corporate Scholarships recognize exceptional future Fox MIS students with **\$5,000 tuition scholarships**. Again, students must excel academically and impress the committee with their potential for achievement and accomplishment. Below are the corporations that currently offer IBIT scholarships.



2016-2017 **YEAR IN REVIEW**



MARCH 2016

TOP CHIEF INFORMATION OFFICERS PROVIDE A PATH TO EXCELLENCE IN DIGITAL LEADERSHIP

In spring of 2016, Chief Information Officers from across the nation gathered at Temple University for the "Digital Leadership: The future for CIOs" symposium, an event organized by IBIT. Speakers included:

- Victor Fetter, Managing Director and CIO of LPL Financial, the nation's largest independent broker-dealer
- + Christopher Kearns, Vice President of Information Systems & Global Solutions at Lockheed Martin, the global defense and electronics manufacturer
- Walter A. Yosafat, Senior Vice President and Global CIO for Wyndham Worldwide, one of the world's largest hospitality companies
- Jazz Tobaccowalla, Vice President and CIO for Regeneron Pharmaceuticals, Inc., a \$5 billion biopharmaceutical company
- Greg Meyers, Corporate Vice President and CIO for Motorola Solutions, a \$6.5 billion communications and public safety firm

Moderator **Rich Brennen**, the North American CIO Practice Leader and Partner at executive search firm Spencer Stuart, led the symposium through topics such as the practical importance of big data, digital innovation, and recruiting a new generation of tech-savvy employees.

Participants, who enjoyed spirited conversations with speakers throughout the day, rated the symposium highly. They commented favorably on the "high-level" insights and the variety of speakers and topics; some added that they wished the discussions were longer, with more concrete recommendations. Many noted that they appreciated the opportunity to engage with knowledgeable speakers and peers.

SEPTEMBER 2016 4TH ANNUAL IT CAREER FAIR

Each year, the Information Technology Career Fair connects high-performing students interested in internships and jobs with top employers looking to recruit graduates of the Fox School of Business MIS, IT Audit and Cyber-Security, Information Technology Management, Digital Marketing and ITIE programs. Highlights from the 2016 fair included:

- + \$11,500 in scholarships raised by 31 firms
- + 214 students in attendance



Photo by Joe Allegra



To learn about the Analytics Challenge visit analyticschallenge.temple.edu.

FALL 2016 4TH ANNUAL TEMPLE UNIVERSITY ALEXION ANALYTICS CHALLENGE

The Fourth Annual Temple University Alexion Analytics Challenge, which was open to all Temple students and featured problems and data sets from Alexion, AmerisourceBergen and Merck, culminated in November of 2016 with student presentations and an awards ceremony.

Students won prizes of **\$500 to \$2,500** out of a total pool of **\$12,000**. **George Llado**, Senior Vice President and Chief Information Officer of Alexion Pharmaceuticals, presented the keynote speech and assisted in presenting the awards.

Since its inception four years ago, the competition has attracted more than 880 entries across the university. In 2016, there were 187 entries from 400 students from schools including Fox, College of Liberal Arts, Engineering and Tyler.

The challenge is organized by **David Schuff**, MIS Chair, and **Laurel Miller**, Director of IBIT, and offered in cooperation with the Office of the Senior Vice Provost for Undergraduate Studies and the General Education Program.



FALL 2016

NATIONAL CYBER ANALYST CHALLENGE AND CONFERENCE

In August of 2016, a panel of industry experts chose 10 university finalists for the 2016 National Cyber Analyst Challenge (NCAC), an interdisciplinary competition supporting top students pursuing cyber-related degrees in the nation's leading programs. Powered by Leidos and administered by IBIT, the competition sent the 10 teams to Phase 2 Advanced Cyber-Training and the subsequent Phase 3 Finals in Reston, Virginia.

The competition, which was developed to enhance students' skills and inspire them to pursue careers in cyber security, focuses on analysis, threat identification and mitigation planning. The three-month, multi-phased project provides a fictitious cyber incident; teams submit a C-level presentation analyzing the incident and providing recommendations. Judges score contenders on technical proficiency, judgment and communication.

The finalists were Carnegie Mellon University, Howard University, Iowa State University, Penn State University, Syracuse University, Temple University, University of Maryland University College, University of South Florida, University of Texas at San Antonio, and Villanova University. Carnegie Mellon was the overall winner and recipient of a \$25,000 prize aimed at supporting the development of students, faculty and curriculum. The other finalists received between \$6,000 and \$12,000 in awards.

Additionally, a new NCAC conference debuted in 2016. Geared toward schools interested in expanding their cyber programs, the conference featured both faculty and industry experts. Together, they helped identify a set of strategies designed to enhance cyber education and research through data-centric collaboration between industry and academia.

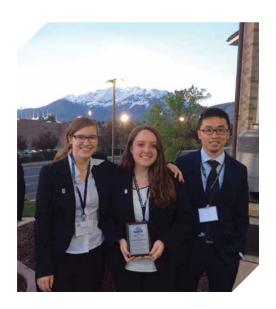
To learn more about the challenge and conference, visit cyberanalystchallenge.org.

SPRING 2017

AMERISOURCEBERGEN ANALYTICS CHALLENGE, NATIONAL AIS STUDENT CONFERENCE AND COMPETITION

Last April, a student team fielded by the MIS student organization won first place in the IBIT organized National AmerisourceBergen Analytics Challenge at the Eighth Annual Association for Information Systems (AIS) Student Chapter Leadership Conference and Competition at Brigham Young University. Notable details include:

- The contest featured data challenges from Merck, Alexion, and AmerisourceBergen.
- + There were 43 entries from 22 different universities.
- + Finalists included Roger Williams University, Temple University, University of Georgia, University of Cincinnati and University of Michigan Dearborn.







Photos by Joe Allegra

APRIL 2017

BUILDING A SAFER INFRASTRUCTURE: THE ROLE OF CYBER-SECURITY POLICIES AND PROCESSES

IBIT welcomed some of the world's foremost cyber-security experts for an engaging panel on cyber security's role in policies and happenings in the U.S. and the world. A trio of distinguished panelists offered insights on everything from managing federal and state cyber regulations to the newly expanded role of IT in protecting vital infrastructures.

Highlights of the event included:

- A panel of experts comprised of a former National Intelligence Officer, Microsoft's Director of Government Security Policy and Strategy Team, and Temple Law School's James E. Beasley Professor of Law
- An audience of roughly 70, including participants from Temple's Information Technology Auditing and Cyber Security program (ITACS) and local industry professionals
- A partnership with the Beasley School of Law in organizing the event



THE IBIT MENTORING PROGRAM: MATCHING STUDENTS WITH TOP INDUSTRY EXECUTIVES

In 2016-2017, dozens of experienced IT executives served as sounding boards and advisors for MIS capstone projects.

The goal of the IBIT Mentoring Program is to match experienced executives with student projects. The senior executives are usually members of the Fox IT advisory board or employees of IBIT member firms. The role of the mentor is to work with a team of students and provide ideas, feedback, and act as a sounding board for challenges and problems. The mentors also serve as judges for the final project competition, where students semester-long projects are evaluated during final presentations.

The benefit for mentors is the opportunity to engage with outstanding students; the benefit for students is the chance to leverage the experience of senior executives. The IBIT mentoring program is chaired by **Bruce Fadem**, Chair of the Fox IT advisory board.

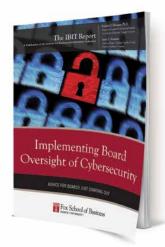
In 2016-17, IBIT matched 36 industry executives to MIS student projects.

In spring 2017, the winning team was "Floating Bridges", an application that combines 3-D mapping drones, bridge-assessment algorithms and augmented reality to give experts a cost-effective way to assess a bridge's structural needs. Team members Alexandra lacovetti, Nicholas Rivera, Bridget Silk and Benjamin Sulaiman were mentored by Fox IT advisory board member Joe Spagnoletti.

The fall 2017 winner was My.Di, a tool for monitoring digital identity. The team, composed of **Kimberly Eastlake, Mia Jardine, Noah Mercado, Ryan Pace** and **Nodir Zakhidov**, was mentored by **Sondra Barbour**, the inaugural recipient of the Fox IT Award for Distinguished Alumni.

THE **IBIT REPORT**

The IBIT Report provides actionable knowledge to industry based on rigorous academic research. Reports—written by academic and industry experts and reviewed by an industry editorial board—focus on a topic important to IBIT members.

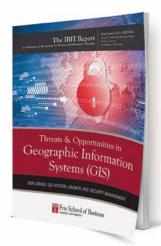


IMPLEMENTING BOARD OVERSIGHT OF CYBERSECURITY

Rich Flanagan and Janet Yeomans

Many well-known and well-respected companies, when hit by hackers, have had their customers' data security compromised along with their reputations. Others have not. Why?

While oversight of cybersecurity risk management should be a regular agenda item for boards of directors, many boards do not have the knowledge or experience to address it. This IBIT Report is a call to action for boards, urging them to think more carefully about their investment of time and attention in securing their information assets. For boards just starting out as well as those already attempting to deal with this issue, the authors detail the steps to define roles and responsibilities, influence corporate culture, develop processes, and establish partnerships.



THREATS AND OPPORTUNITIES IN GEOGRAPHIC INFORMATION SYSTEMS

David Lanter

The National Academy of Public Administration identified GIS data as essential to more than 50 percent of the nation's domestic economic activities.

Geospatial data produced by geographic information systems (GIS) play a central role in domestic economic and governmental activities. Publicly shared geographic information detailing the locations and make-up of critical infrastructure have recently become a concern. This report outlines the unique opportunities, history and threats of GIS, and how to effectively handle information security risks associated with public GIS data.

EDITORIAL BOARD **Bruce Fadem**Co-editor-in-chief

David Schuff Co-editor-in-chief

Kent Seinfeld Associate Editor Laurel Miller

Managing Editor

Munir Mandviwalla

Publishe

Read the IBIT Reports at ibit.temple.edu/ibit-report

AIS—TEMPLE UNIVERSITY INFORMATION SYSTEMS **JOB INDEX**

A joint project between the Association for Information Systems and IBIT.



The forthcoming 2017 report will include data from 2,140 recent graduates from 58 universities across the U.S. The report will provide national placement rates, salaries, the most popular jobs, demographics, and the knowledge levels of recent information systems graduates in Bachelor and Masters programs. The results will also highlight the most important factors in why graduates get job offers and what factors influence why they accept or reject offers. Finally, the report will analyze the patterns of how graduates move to different regions in the country.

Read the IS Job Index Report at isjobindex.com





LOCKING AHEAD

6TH ANNUAL TEMPLE UNIVERSITY ANALYTICS CHALLENGE

APPOINT NEW EXECUTIVE-IN-RESIDENCE

SYMPOSIUM: THE PRACTICAL PATH FORWARD - COGNITIVE COMPUTING, AI, AND ANALYTICS

GROW IBIT WITH SMALL-COMPANY AND LARGE-COMPANY MEMBERSHIP

HOST 18TH ANNUAL
FOX IT
AWARDS

ADD **NEW MEMBERS** TO FOX IT ADVISORY BOARD

AWARD
FOX IT ADVISORY
BOARD AND
IBIT CORPORATE
SCHOLARSHIPS

4TH ANNUAL NATIONAL NBCUNIVERSAL **ANALYTICS CHALLENGE**

3RD ANNUAL NATIONAL CYBER ANALYST CHALLENGE & CONFERENCE

PUBLISH NEW IBIT REPORTS

6TH ANNUAL FOX IT CAREER FAIR

COMING SOON

THE DIGITAL INNOVATION FOUNDRY

THE 2017 IS JOB INDEX

IBIT **STAFF**



JACKLIN ALTMAN

Assistant Director

Jacklin is Assistant Director of IBIT and assists in managing external partnerships and professional development programs, as well as acting as an interdepartmental liaison.

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MUNIR MANDVIWALLA

Executive Director

Munir is Executive Director of IBIT and provides strategic leadership on programs and relationships.

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LAUREL MILLER

Director

Laurel is Director of IBIT and manages external relations and programs, including the IT Awards, IBIT memberships, and The IBIT Report.

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DAVID SCHUFF

Co-Editor-in-Chief, The IBIT Report

David is Co-Editor-in-Chief of the *IBIT Report*. He provides leadership in applying academic research to practice. David is also the Chair of the MIS department.

Contact David at Schuff@temple.edu

ABOUT IBIT

The Fox School's Institute for Business and Information Technology (IBIT) provides cutting-edge knowledge and valuable connections to sustain excellence in information technology. IBIT integrates industry perspectives with academic research expertise to create forums for generating and exchanging best practices.

IBIT is affiliated with the Fox School's nationally ranked Department of Management Information Systems. IBIT draws participating faculty and students from MIS as well as the expertise of the entire Fox and Temple University community.

IBIT membership offers participating corporations the opportunity to leverage our knowledge, human capital, relationships and established network.



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