THANK YOU!
TO OUR 2017 ANNUAL MEETING SPONSORS
Outgoing/Incoming Board Chair

Andy Williams
Rogers Group

THANK YOU!

Reed Adams
Technology Service Corporation
About the BEDC

The mission of the BEDC (est. 1985) is to be the catalyst for retention, development, and attraction of quality jobs in Monroe County.

“...economic development [is] the facilitation of investment that leads to long-term community prosperity.” -IEDA
BEDC Staff

- 4 Full-time Staff
- 1 SPEA Fellow (Graduate Student): Sarah Garcia
- 1 SPEA Professional Development Intern (Undergraduate Student): Logan Burton
- 1 BHSN Intern (High School Student): Justin deMatas
BEDC Membership

55 Board Members
36 General Members
6 Special Members

Special thanks to the City of Bloomington, Monroe County Council, and Monroe County Commissioners who support BEDC
# Executive Committee

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
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<tbody>
<tr>
<td>Reed Adams</td>
<td>Chair</td>
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<tr>
<td>Mark Figg</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; Vice Chair</td>
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<tr>
<td>Sarah Rogers</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Vice Chair</td>
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<tr>
<td>Cindy Kinnarney</td>
<td>Secretary</td>
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<tr>
<td>Dave Conner</td>
<td>Treasurer</td>
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<tr>
<td>Andy Williams</td>
<td>Past Chair</td>
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<tr>
<td>Allison Chopra</td>
<td>City Council Rep.</td>
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<tr>
<td>TBD</td>
<td>County Commissioners’ Rep.</td>
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Community Engagement

Boards and Commissions:
• Visit Bloomington Board
• Ellettsville Chamber of Commerce Board
• Greater Bloomington Chamber of Commerce Board, Legislative Affairs & I-69 Committees
• Ivy Tech Community College-Bloomington Board and Computing and Informatics Advisory Board
• Indiana Small Business Development Center Advisory Board
• Workforce Development Board
• IUCU Board
• Board of Public Works
• hYPe
• SCI REMC
• Monroe County Historical Society Advisory Board
• IU Health Bloomington Hospital Board
• MCCSC Referendum Committee
• Bloomington Housing Authority
Economic Development Projects

- Innovation West
- The Switchboard
- B-Start (UEDA)
- Duke Energy Site Readiness (3300 Bunger Road)
- Buskirk-Chumley Arts Startup Program
- New light industrial building on Vernal Pike
- SPEA Capstone Project
- Testified to Senate Committee on Transportation Bill
- Regional Partners Meetings
- Wage Growth Task Force
- GE Working Group
- County Zoning Amendment
- Water Supply
BTP/BLSP

- Develop and increase focus on technology, biotech, bioinformatics, medical device, pharmaceutical, and other tech and life sciences sectors.

- Business recruitment, site marketing and promotion.
Retention & Expansion Projects in 2016

- **3D Stone**: Retained 44 full time jobs, added 32 new jobs, and invested $1,010,000.
- **Secretly Group**: Retained local jobs and made significant investment to stay in Bloomington.
- **Tsuchyia Group North America (TASUS)**: Adding 18 new jobs, investing $9.2 million in new construction.
Special Announcement
Focus Areas 2017

Goals:
Increase Job Opportunities, Local Policy, Dimension Mill, Marketing our Community Assets

Vision:
Bloomington/Monroe County has many opportunities for all to work; an innovation and entrepreneurship culture abounds; and regional involvement.
THANK YOU!
TO OUR 2017 ANNUAL MEETING SPONSORS
Keynote

Dr. Raj Acharya
Dean, Rudy Professor of Engineering, School of Informatics and Computing
Indiana University
IU Is Redefining Engineering
School of Informatics and Computing

- Computer Science
- Informatics
- Library & Information Sciences
- Intelligent Systems Engineering
- Psychology
- Life Sciences
- Social Studies
- Operations Research
- Statistics
- Business
- Law
- Science & Technology Studies
- Communication
- Health Care
- Cognitive Studies
- Robotics
- Economics
- Law
- Psychology
- Life Sciences
- Social Studies
- Operations Research
- Statistics
- Business
- Law
- Science & Technology Studies
- Communication
- Health Care
- Cognitive Studies
- Robotics
- Economics
School of Informatics & Computing

- The School of Informatics was established in 2000 as first of its kind in the United States.
- Computer Science was established in 1971 and became part of the school in 2005.
- Library and Information Science was established in 1951 and became part of the school in 2013.
- Intelligent Systems Engineering program started fall 2016.
Mission of the School

• Excellence in education and research.
• Partnership for economic development and entrepreneurship.
• Commitment to diversity – participation of women and underrepresented minorities.
Highlights

• IUB Computer Science ranked 12\textsuperscript{th} in country in total external research expenditures.
• IU and UIUC are the top 2 universities in \textit{Harnessing Data}. (\textit{Harnessing Data} is one amongst 6 critical ideas of NSF).
• Executive Associate Dean Mathew Palakal (IUPUI) invited to the White House.
• Awarded 991 degrees (IUB: 742, IUPUI: 249)
• 4243 Students (UG+Grad, IU + IUPUI)
Informatics, Computing, Engineering
The Driving Force for Innovation and Technology

• Artes Liberales: Body of knowledge needed to lead a civic and productive life.
• “Informatics” is the new liberal arts.
• “All Science Is Computer Science.” (NY Times article)
Renaissance Engineer

The School of Informatics and Computing educates computer scientists, informaticians, and engineers who are firmly grounded in the fundamental principles of their discipline. We produce global thinkers who are well versed in the humanities and are creative problem solvers.
School Goals

• Known in the field of computer science as:
  • The best research and education unit in Indiana
  • Amongst the top 3 in the Big Ten
  • Amongst the top 10 public universities

• Amongst the top 3 universities in informatics, and library and information science.

• Known as the most innovative engineering program in the world.

• Create successful startups.
SoIC: Sensors to Solutions

- Sensors (Data)
- Decisions/Actions
- Knowledge
- Information

Computer Science
Informatics
Library and Information Science
Intelligent Systems
Intelligent Systems Engineering

• Small, focused program. Goals within 6 years:
  – 40 faculty
  – 500 undergraduate students
  – 300 master’s students
  – 165 Ph.D. students

• B.S. and Ph.D. programs started Fall ’16.
• M.S. (industry oriented) being submitted for approval.
Industry Partners

Program guidance provided by industry partners including CRANE, Lilly, Cummins, and Cook.
ISE – What is it?

• “Everybody’s talking about the Internet of Things and how it’s going to change the world. The graduates from our program will be the ones making it happen.”
  —Geoffrey C. Fox, Intelligent Systems Engineering Chair

• “The future of the medical technology industry is based largely on the ability to develop increasingly intelligent devices in addition to the ability to use big data. This program is necessary for Cook and our industry.”
  —Steve Ferguson, Chairman of Cook Group
Hockey Saying

“You want to be where the puck is going to be.”
Quo Vadis

- Mobility
- Artificial Intelligence
- Size, Heat
- Connectivity
- Scalability
- Biomimicries
- ‘Making things with programs’
- Globalization, Technology, Climate science
NAE/MIT Report: Convergence

Transdisciplinary Integration of
  – Life Sciences,
  – Physical Sciences (includes information and mathematical sciences), and
  – Engineering.
Intelligent Systems Engineering

- Bioengineering
- Computer Engineering
- Sensors, Detectors and Instrumentation, Mobile Devices, Internet of Things, Robotics Computing Hardware
- Intelligent Systems
  - Big Data
  - HPC, Modelling and Simulation
  - User Interface Design
- Signal Processing
  - Control Theory
  - Information Theory
- Molecular and Nanoscale Engineering
- Environmental Engineering
- Neuro-engineering
- Cyber-Physical Systems

INdiana University
SCHOOL OF INFORMATICS AND COMPUTING
B.S. in Intelligent Systems Engineering

- Two initial tracks: computer engineering (CE), cyber-physical systems (CPS)
- Opportunities for entrepreneurship, research, and internships.
- Will seek ABET accreditation.
- CE track has depth of coverage competitive with other major universities.
  - Breadth different (and better!) than CE programs at other universities.
- CPS offers expertise in important new fields (IoT, robotics).
- Intend to add specializations in bioengineering, nano-engineering.
- Started in Fall 2016: ~23 new students enrolled with three new ISE specific courses.
Ph.D. in Intelligent Systems Engineering

- **Seven tracks**: computer engineering, cyber-physical systems, bioengineering, nano-engineering, environmental engineering, neuro-engineering, plus intelligent systems
- **Started Fall 2016** with 15 new students plus 8 transfers from other IU programs
  - 13 CE/IS (2 from Crane)
  - 6 CPS/IS
  - 1 Bio-engineering
  - 1 Nano-engineering
  - 1 Neuro-engineering
  - 1 Environmental engineering
ISE: Advanced Manufacturing

- Cybermanufacturing.
- Nanomanufacturing.
- Aerospace, Defense, Automotive, Pharmaceutical.
- Rapid virtual prototyping followed by physical prototyping.
- Computational fishing expedition, followed by bench experiments.
- Synthetic Biology.
- Integrate: Artificial Intelligence + CPS (Robotics) + 3D Printing + 6 Sigma + Compliance.
Proposed ISE Collaboratory

- **Collaboratory**: Bill Wulf Virginia 1989: “center without walls”, an environment where participants make use of computing and communication technologies to access shared instruments and data, as well as to communicate with others.
- We will set up ISE with a **Department** and a **Collaboratory**.
- We will form an Industry consortium with organizations such as Crane becoming involved with ISE through the Collaboratory.
- Through the ISE Collaboratory, faculty and organizations would have a strong role in advising the department on many academic matters.
- As ISE evolves, we see the Collaboratory growing faster than the department and to be home for interdisciplinary projects (such as Grand Challenges involving ISE) and host for many important discussions and meetings.
Vision
Internationally Renowned for Excellence in Scholarship, Education, and Innovation

• **Excellence in scholarship:** Named chairs for retaining and recruiting outstanding faculty.
• **Excellence in education:** Named scholars for educating “Renaissance Engineers.”
• **Excellence in innovation:** Named center for educating the next generation of innovators and entrepreneurs.
Outcomes

• Be known for high quality interdisciplinary research.
• Place students as faculty at highly ranked universities.
• Educate globally aware scientists and engineers.
• Create successful startups.
• Have a major presence in Indiana, Silicon Valley, Midwest, and Washington Software Valley.
Thank You!

Raj Acharya
racharya@iu.edu

Learn more about the Indiana University School of Informatics and Computing at www.soic.indiana.edu
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