Office of the Associate Dean for Academic Affairs

Esfan Haghverdi
Executive Associate Dean for Academic Affairs

School of Informatics, Computing, and Engineering
Indiana University Bloomington

February 22, 2019

SICE History

- **2000**, School of Informatics
- **2005**, School of Informatics
  (CS joined the school)
- **2009**, School of Informatics and Computing
- **2013**, School of Informatics and Computing
  (SLIS joined the school)
- **2015**, Intelligent Systems Engineering Department and Program were
  approved
- **2017**, School of Informatics, Computing, and Engineering

Structure of the Office (2013)

- Academic Operations (Sally Deckard)

Structure of the Office (2013)

- Academic Operations (Sally Deckard)
- Career Services (Kate Caldwell)

Structure of the Office (2013)

- Academic Operations (Sally Deckard)
- Career Services (Kate Caldwell)
- Undergraduate Recruiting and Advising (Nancy Lemons)

Structure of the Office (2019)

- Academic Operations (Sally Deckard)

Structure of the Office (2019)

- Academic Operations (Sally Deckard)
- Career Services (Jodie Sackley)

Structure of the Office (2019)

- Academic Operations (Sally Deckard)
- Career Services (Jodie Sackley)
- Computing Education Outreach (Michele Roberts)

Structure of the Office (2019)

- Academic Operations (Sally Deckard)
- Career Services (Jodie Sackley)
- Computing Education Outreach (Michele Roberts)
- Diversity and Inclusion (Lamara Warren)

Structure of the Office (2019)

- Academic Operations (Sally Deckard)
- Career Services (Jodie Sackley)
- Computing Education Outreach (Michele Roberts)
- Diversity and Inclusion (Lamara Warren)
- Online Education (Kayla Scroggins)

Structure of the Office (2019)

- Academic Operations (Sally Deckard)
- Career Services (Jodie Sackley)
- Computing Education Outreach (Michele Roberts)
- Diversity and Inclusion (Lamara Warren)
- Online Education (Kayla Scroggins)
- Student Engagement and Success (Tiana Iruoje)

Structure of the Office (2019)

- Academic Operations (Sally Deckard)
- Career Services (Jodie Sackley)
- Computing Education Outreach (Michele Roberts)
- Diversity and Inclusion (Lamara Warren)
- Online Education (Kayla Scroggins)
- Student Engagement and Success (Tiana Iruoje)
- Undergraduate Advising (Nancy Lemons)

Structure of the Office (2019)

- Academic Operations (Sally Deckard)
- Career Services (Jodie Sackley)
- Computing Education Outreach (Michele Roberts)
- Diversity and Inclusion (Lamara Warren)
- Online Education (Kayla Scroggins)
- Student Engagement and Success (Tiana Iruoje)
- Undergraduate Advising (Nancy Lemons)
- Undergraduate Recruiting (Natalie Edwards)

Structure of the Office (2019)

- Academic Operations (Sally Deckard)
- Career Services (Jodie Sackley)
- Computing Education Outreach (Michele Roberts)
- Diversity and Inclusion (Lamara Warren)
- Online Education (Kayla Scroggins)
- Student Engagement and Success (Tiana Iruoje)
- Undergraduate Advising (Nancy Lemons)
- Undergraduate Recruiting (Natalie Edwards)
- Cybersecurity Programs (Raquel Hill)
- Data Science Programs (Haixu Tang)
- Serve/Teach IT (Matt Hottell)

Structure cont'd

- Strategic Initiatives (Collaboration with Travis Brown)

Structure cont'd

- Strategic Initiatives (Collaboration with Travis Brown)
- Designated International Administrator (Collaboration with OVPIA)

Support

- Karen Kenny
- Michele Dompke

SICE Structure

- Department of Computer Science

SICE Structure

- Department of Computer Science
- Department of Informatics

SICE Structure

- Department of Computer Science
- Department of Informatics
- Department of Information and Library Science
  (graduate program)

SICE Structure

- Department of Computer Science
- Department of Informatics
- Department of Information and Library Science
  (graduate program)
- Department of Intelligent Systems Engineering
  (Fall 2016)

SICE Structure

- Department of Computer Science
- Department of Informatics
- Department of Information and Library Science
  (graduate program)
- Department of Intelligent Systems Engineering
  (Fall 2016)
- Data Science Program
  (graduate program)

Department of Computer Science

- Undergraduate Degrees
    - Bachelor of Science in Computer Science: 538 students
      (Specializations: AI, PL, Systems, Foundations, Security, Data Science,
      Software Engineering)
    - Bachelor of Arts in Computer Science
      (Administered by the College of Arts and Science)
    - Accelerated Master's Program in Computer Science
    - Minor in Computer Science
    - Minor in Information Technology

Department of Computer Science

- Graduate Degrees
    - M.S. in Computer Science
    - M.S. in Bioinformatics
    - M.S. in Secure Computing
    - Dual Degree in Secure Computing and the Russian and East European Studies
    - M.S. in Cybersecurity Risk Management (jointly with Maurer and Kelley)
    - Ph.D. in Computer Science
    - Ph.D. in Cognitive Science and Computer Science
      (A dual major in cognitive science and computer science)
    - Ph.D. Minor in Computer Science

Department of Informatics

- Undergraduate Degrees
    - Bachelor of Science in Informatics: 1577 students
      (2nd largest major on campus!)
      (Cognates in 30+ areas)
    - BSc Informatics $\longrightarrow$ MSIS (Kelley School of Business)
    - BSc Informatics $\longrightarrow$ MIS (ILS)
    - Certificate in Informatics
    - Minor in Human-Centered Computing
    - Minor in Informatics
    - Minor in Security Informatics

Department of Informatics

- Graduate Degrees
    - M.S. in Informatics
      (Complex systems, proactive health informatics, human-computer interaction design, music informatics, intelligent and interactive systems, computing, culture and society, and virtual heritage)
    - M.S. in Human-Computer Interaction Design
    - Ph.D. in Informatics
      (Multiple tracks)
    - Ph.D. Minors in Informatics
      (Bioinformatics, complex networks and systems, data science, human-computer interaction, informatics, music informatics, security informatics, and social informatics)

Information and Library Science

- Minor in Intelligence Studies
- Master of Information Science (M.I.S.)
- Accelerated Master's Program in Information Science
  (B.S. or B.A. and a Master of Information Science)
- Master of Library Science (M.L.S.)
- Accelerated Master's Program in Library Science
  (B.S. or B.A. and a Master of Library Science)
- Ph.D. in Information Science
- Ph.D. minors: ILS, Information Science
- Graduate Certificate in Information Architecture

Department of Intelligent Systems Engineering

- Undergraduate Degrees
  - Bachelor of Science in Intelligent Systems Engineering: 89 students (Concentrations: Computer Engineering/Cyber-physical Systems, Bioengineering, Molecular Nanoscale Engineering)
  - Accelerated Master of Science in Intelligent Systems Engineering

Department of Intelligent Systems Engineering

- Graduate Degrees
  - Master of Science in Intelligent Systems Engineering
  - PhD in Intelligent Systems Engineering
    (Tracks : Bioengineering, Computer Engineering, Cyber-physical Systems, Environmental Engineering, Molecular and Nanoscale Engineering, Neuroengineering)

Data Science

- Data Science GR CRT
- Data Science MS
- Data Science MS Online

Graduate Certificates

- Data Science GR CRT
- Cybersecurity GR CRT
- Information Architecture GR CRT

Ranked List by Enrollment

- Data Science Online, 294
- Data Science MS, 145
- Computer Science PhD, 136
- Computer Science MS, 126
- Informatics PHD, 110
- Library Science MLS, 89
- Human Comp Interaction MS, 85
- Intelligent Systems Engineering PhD, 69
- Information Science MIS, 36
- Data Science GR CRT, 34
- Information Science PHD, 25
- Computer Sci-BS/MS, 20
- Intelligent Systems Engineering MS, 11
- Cybersecurity GR CRT, 7
- Secure Computing MS, 6
- Informatics MS, 5
- Information Architecture GR CRT, 1
- Bioinformatics MS, 0

Major Undergraduate Initiatives

- Direct Admission
- Living-Learning Center
- International Experience
- Undergraduate Research
- Diversity
- Computing Education Outreach

Direct Admission

- Students admitted to IU
    - Directly admitted to the major
    - Admitted to University Division, as a premajor
    - Admitted to University Division, exploratory

Direct Admission

- Students admitted to IU
  - Directly admitted to the major
  - Admitted to University Division, as a premajor
  - Admitted to University Division, exploratory
- Idea: Grow the cohort size in the first category above

Direct Admission by the Numbers (Info and CS)

Year	Total admits	Direct Admits	Direct/Total
2013	212	30	14%
2014	231	52	23%
2015	282	88	31%
2016	280	101	36%
2017	278	98	35%
2018	326	117	36%

Direct Admission by the Numbers (ISE)

Year	Total admits	Direct Admits	Direct/Total
2016	36	25	70%
2017	35	27	77%
2018	63	53	84%

Support System for DAs

- Scholarship
- A new course, CSCI-C102 *Great Ideas in Computing*
- Various programs designed by Student Services staff
- InWIC trip for female freshman students
- GHC trip for female junior students

Living-Learning Center

- Student Engagement and Success
- Teter Hall, 5th floor, 54 students, co-ed
- Direct admit, premajors, and returning higher level students
- Started in Fall 2017
- Two floors in 2020!

International Experience

- Long-term plans (Exchange Programs):

International Experience

- Long-term plans (Exchange Programs):
  1. Sungkyunkwan University (SKKU), Department of Library and Information Science/Data Science
  2. Sungkyunkwan University (SKKU), CICE and CS

International Experience

- Long-term plans (Exchange Programs):
  1. Sungkyunkwan University (SKKU), Department of Library and Information Science/Data Science
  2. Sungkyunkwan University (SKKU), CICE and CS
  3. Dual degree in Computer Science (Fudan University/SICE CS)

International Experience

- Long-term plans (Exchange Programs):
    1. Sungkyunkwan University (SKKU), Department of Library and Information Science/Data Science
    2. Sungkyunkwan University (SKKU), CICE and CS
    3. Dual degree in Computer Science (Fudan University/SICE CS)
    4. University of Mannheim, School of Business Informatics and Mathematics
    5. University of Edinburgh, School of Informatics

IE cont'd

- Short-term plans

IE cont'd

- Short-term plans
  1. IT in Emerging Markets-India , Fall 2016
     New Delhi + Pune, December 27, 2016-January 7, 2017.
     Repeated in 2018, and 2019.
     Special focus: Digital India Program

IE cont'd

- Short-term plans
  1. IT in Emerging Markets-India , Fall 2016
     New Delhi + Pune, December 27, 2016-January 7, 2017.
     Repeated in 2018, and 2019.
     Special focus: Digital India Program
  2. Other offerings with India and different foci

IE cont'd

- Short-term plans
  1. IT in Emerging Markets-India , Fall 2016
     New Delhi + Pune, December 27, 2016-January 7, 2017.
     Repeated in 2018, and 2019.
     Special focus: Digital India Program
  2. Other offerings with India and different foci
  3. IT in Emerging Markets-China in collaboration with Fudan University
     and Tsinghua University

IE cont'd

- Short-term plans
  1. IT in Emerging Markets-India , Fall 2016
     New Delhi + Pune, December 27, 2016-January 7, 2017.
     Repeated in 2018, and 2019.
     Special focus: Digital India Program
  2. Other offerings with India and different foci
  3. IT in Emerging Markets-China in collaboration with Fudan University
     and Tsinghua University

- International Serve/Teach-IT (Belize: 2015, 2018)

Undergraduate Research

- UROC and SROC, numbers up steadily

Undergraduate Research

- UROC and SROC, numbers up steadily
- Opportunities for early encounters with real world problems
- Opportunities to develop skills for working in teams, staying focused, accepting uncertainty
- Opportunities for early encounters with faculty and graduate students

Undergraduate Research

- UROC and SROC, numbers up steadily
- Opportunities for early encounters with real world problems
- Opportunities to develop skills for working in teams, staying focused, accepting uncertainty
- Opportunities for early encounters with faculty and graduate students
- Setting bigger goals:

Undergraduate Research

- UROC and SROC, numbers up steadily
- Opportunities for early encounters with real world problems
- Opportunities to develop skills for working in teams, staying focused, accepting uncertainty
- Opportunities for early encounters with faculty and graduate students
- Setting bigger goals:
  1. Competitions: e.g. ACM's Student Research Competition, ...
  2. Publications: IU Journal of Undergraduate Research, ...
  3. Senior Thesis Award

Diversity

- Three times NCWIT Pacesetter Team!
- Collaborative plans with Hudson & Holland Scholars Programs and Groups Scholars Program
- Various programming for women and URM in computing

Computing Education Outreach

- K-12, teacher training, CS education:
  (source: https://code.org/advocacy/state-facts/IN.pdf)

Computing Education Outreach

- K-12, teacher training, CS education:
  (source: https://code.org/advocacy/state-facts/IN.pdf)

  1. 90% of parents in US want their child's school to teach CS but only 35% of schools teach it.
  2. 67% of parents and 56% of teachers in US believe students should be required to learn CS.

Computing Education Outreach

- K-12, teacher training, CS education:
  (source: https://code.org/advocacy/state-facts/IN.pdf)

  1. 90% of parents in US want their child's school to teach CS but only 35% of schools teach it.
  2. 67% of parents and 56% of teachers in US believe students should be required to learn CS.
  3. Only 93 schools in IN (22% of IN schools with AP programs) offered an AP CS course in 2017-18
  4. Universities in Indiana only graduated 1 new teacher prepared to teach CS in 2016.

Computing Education Outreach

- K-12, teacher training, CS education:
  (source: https://code.org/advocacy/state-facts/IN.pdf)

  1. 90% of parents in US want their child's school to teach CS but only 35% of schools teach it.
  2. 67% of parents and 56% of teachers in US believe students should be required to learn CS.
  3. Only 93 schools in IN (22% of IN schools with AP programs) offered an AP CS course in 2017-18
  4. Universities in Indiana only graduated 1 new teacher prepared to teach CS in 2016.
  5. Indiana is one of the 28 states in US with K-12 CS standards.

Computing Education Outreach

- K-12, teacher training, CS education:
  (source: https://code.org/advocacy/state-facts/IN.pdf)

  1. 90% of parents in US want their child's school to teach CS but only 35% of schools teach it.
  2. 67% of parents and 56% of teachers in US believe students should be required to learn CS.
  3. Only 93 schools in IN (22% of IN schools with AP programs) offered an AP CS course in 2017-18
  4. Universities in Indiana only graduated 1 new teacher prepared to teach CS in 2016.
  5. Indiana is one of the 28 states in US with K-12 CS standards.
  6. 4,511 open computing jobs (2.6 times the state average demand rate), approx. $340M opportunity.

A Peek at the Pipeline

- BSc in Data Science

A Peek at the Pipeline

- BSc in Data Science
- BSc in Cybersecurity and Global Policy (SICE + HLS partnership)

A Peek at the Pipeline

- BSc in Data Science
- BSc in Cybersecurity and Global Policy (SICE + HLS partnership)
- Game Development specialization (CS Program, in collaboration with the Media School)

A Peek at the Pipeline

- BSc in Data Science
- BSc in Cybersecurity and Global Policy (SICE + HLS partnership)
- Game Development specialization (CS Program, in collaboration with the Media School)
- BSc in User Experience Design (SICE + SoAAD)

A Peek at the Pipeline

- BSc in Data Science
- BSc in Cybersecurity and Global Policy (SICE + HLS partnership)
- Game Development specialization (CS Program, in collaboration with the Media School)
- BSc in User Experience Design (SICE + SoAAD)
- A graduate program in AI

A Peek at the Pipeline

- BSc in Data Science
- BSc in Cybersecurity and Global Policy (SICE + HLS partnership)
- Game Development specialization (CS Program, in collaboration with the Media School)
- BSc in User Experience Design (SICE + SoAAD)
- A graduate program in AI
- Experiential learning in Silicon Valley

Major Graduate Initiatives

- Centralization of GSOs
- Aggressive Recruiting Strategies
- Digital Strategies
- PhD Pipeline (GTAP)
- Diversity and Inclusion (AI/ UI training, ...)
- In-service professional training for secondary school teachers
- International student support
- Redefining master's programs

Thank You!

ehaghver@indiana.edu