

Proposal to Indiana University Graduate School and
AGEP Faculty Advisory Board

Bring IT On!

A Workshop to Encourage the Recruitment of a
More Diverse Pool of Doctoral Students in Computing

Respectfully submitted February 28, 2006 by

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Proposed Activity

In an effort to promote the recruitment of a more diverse pool of doctoral students in technology-related fields, we propose to host a workshop at Indiana University (IU), targeting students from Historically Black Colleges and Universities (HBCUs) in the Midwest. The purpose of this workshop is twofold: 1) increase the number of undergraduates in technology fields at HBCUs and 2) recruit minority graduate students from HBCUs to IU.

To address the first goal, the participants will learn how to create their own versions of *Just Be* during the three-day workshop. *Just Be* is a nationally-recognized outreach program created by the “Women in Computing” (WIC) group at Indiana University to help break common stereotypes about people in computing [1, 4]. It is an interactive program that has been presented at K–12 schools in the Midwest for the past two years with uniformly positive reviews from both teachers and students [4]. (Program details can be found at <http://www.cs.indiana.edu/cgi-pub/wic/outreach/index.php>.) The *Just Be* organizers will share their experiences with this type of outreach program and help the workshop participants develop similar programs to attract more students to technology fields at their home institutions.

To address the second goal, we will highlight Indiana University’s Ph.D. programs in Computer Science, Informatics, Information Systems in Kelley School of Business, and School of Library and Information Science (SLIS) during the workshop. The focus is to reveal the diversity present on IU’s campus including a large variety of programs related to computing, many of them multidisciplinary, from which one can choose a graduate program. Our plan includes activities that reflect the cultural diversity at IU and structured information sessions that encourage students to consider graduate school, providing them with specific information about our graduate programs and research activities. Ultimately, this workshop will serve as a networking opportunity where the participants, speakers, IU faculty, and volunteer graduate students from IU can become acquainted and forge relationships that may lead participants to pursue doctoral degrees at IU.

We have the commitment of five speakers with unique perspectives about diversity issues in computing who will share their expertise with the participants (see Speaker Bios). The keynote, Dr. Juan Gilbert, is renowned for his work in the recruitment and retention of

underrepresented minorities in the study of Computer Science. We will target ten HBCUs in neighboring states with programs in Computer Science (see list of targeted schools) and invite a team of two students from each of these schools to attend the workshop. We target schools in the Midwest because it is more likely that students who have lived in the Midwest will choose to attend a Midwestern school. Indeed, 78% of students enrolled at Indiana University – Bloomington are from the Midwest [2]. Our proposal includes funding for all travel, lodging, food, and entertainment expenses so there will be no cost to the students except for their time. We believe this investment will foster good feelings toward IU and build relationships between our school and others. The benefits will stretch beyond the participants as they go back to their home universities to share their outreach programs and workshop experiences, producing a “ripple effect” with the potential of exceeding any that would be achieved by recruiting individual students. *Just Be* was itself the result of a ripple effect – it was inspired by a community outreach project at Carnegie Mellon University (CMU) called *The Roadshow* [3, 5]. CMU’s concept has spread out across North America from Pittsburg to Victoria, Canada. There are now similar programs at Indiana University (USA), Purdue University (USA), Simon Fraser (Canada), Texas A&M (USA), University of Illinois – Urbana-Champaign (USA) and University of Victoria (Canada). We look forward to increasing the number of outreach programs in the Midwest and consequently attracting minority students from HBCUs into IU’s graduate programs.

References

1. Cessna D., Connelly K., Plale B., Siek K., and Stephano A. *Just Be: An Interactive Experience for K-12 Students*. In the Proceedings of ASEE/IEEE Frontiers in Education (FIE'05), 2005. F3H-15-F3H-16.
2. *Future Freshman: Campus Profile*. Indiana University – Bloomington Office of Admissions, 2003. <http://www.indiana.edu/~iuadmit/freshmen/profile.shtml>
3. J. Margolis and A. Fisher, *Unlocking the Clubhouse: Women in Computing*. MIT Press, 2003.
4. Siek K. A., Connelly K. H., Stephano A., Menzel S., Bauer J., and Plale B. *Just Be: Bridging the Gender Divide in CS.. Learning and Leading with Technology* (To Appear – April 2006 Issue).
5. Women at School of Computer Science, “Outreach Roadshow”, <http://women.cs.cmu.edu/What/Outreach/Roadshow/>.

Tentative Schedule: *Bring IT On!* Increasing Diversity in Computing Workshop

Proposed Dates: October 20 – 22, 2006

Friday:

- Arrive early afternoon at Indianapolis airport. Shuttle to Bloomington as participants arrive. (Early arrivals will be met by a student volunteer and entertained until the official meeting begins.)
- 4:00 pm: Welcome/Introduction by President Herbert (invited, but not confirmed)
- 4:30 pm: Ice Breaker
- 5:00 pm: Diversity Panel: *Diversity in Academia*
Dr. Juan Gilbert, Dr. Raquel Hill, Dr. Eden Medina, Dr. William Aspray, and Dr. Christine Ogan (see Speaker Bios)
- 6:00 pm: Dinner at the Indiana Memorial Union
- 7:30 pm: Keynote: *Mentoring Students*
Dr. Juan Gilbert
- 8:30 pm: Fun Event Options: *Bloomington is Fun*
 1. IU Black Student Union sponsored event (invited, but not confirmed)
 2. Event at IU School of Music
 3. Ice Cream on Kirkwood

Saturday:

- 8:00 am: Breakfast by the Bloomington Bagel Company
Computing research posters on display
- 9:00 am: *Just Be* presentation
Indiana University Women in Computing Group
- 10:00 am: Brainstorming session: *What type of outreach will work at your school?*
- 10:45 am : Work in the computer labs to develop five slides utilizing IU's *Just Be* presentation as a template
 - 1 slide: What should your audience know about you?
 - 3 slides: What should your audience know about your school?
 - 1 slide: What does your audience want to know about technology fields?
(e.g. salary, demand, job security, helping others and so on)
- 12:30 pm: Lunch and Lightning Talks: *Why IU Computing is Exciting!*
 - While participants eat lunch there will be lightning talks by the various research groups.
- 1:30 pm : Campus Tour
- 3:00 pm: Practice presentations created in the morning: *Bring Just Be Home*
 - 10 minutes per group
 - *Just Be* presenters will give feedback to groups about their presentations
 - Snacks provided (beverages, cookies, etc.)
- 5:30 pm: Dinner on Kirkwood or on The Square: *Bloomington has Culture*
- 7:00 pm: Computing Facility Tours: *Exciting Computing at IU*
Virtual Cave (<http://www.indiana.edu/~rcapub/v21n2/p28.html>)
Johnny Box (<http://www.iri.informatics.indiana.edu/>)
- 8:30 pm: Fun Event Options: *Bloomington is Fun*
See events from Friday evening.

Sunday:

- 8:00 am: Breakfast by the Bloomington Bagel Company
Computing research posters on display
- 9:00 am: Information Session: *Keep it Going*.
 - How to keep an outreach program going at your school
 - Lightning talks: tips on surviving graduate school
 - How to stay connected after the workshop
- 10:00 am: Closing Remarks: Juan Gilbert
- 11:00 am: Shuttle back to Indianapolis airport

Budget Request

Cost per student (20 students): 10 schools in OH, KY, TN, NC, MO with CS programs

Item	Cost/Student	Total Cost
Hotel – IMU (share room, with same gender participant)	150.00	
Flight	300.00	
Shuttle	50.00	
Workshop T-Shirt	15.00	
Workshop Backpack	15.00	
Binder	2.00	
Storage media	15.00	
Computer account for lab session	5.00	
Total	552.00	

Guest Speaker: Dr. Juan Gilbert (other speakers will not need travel funds)

Item	Cost/Speaker	Total Cost
Hotel – IMU	300.00	
Flight	300.00	
Private Sedan pickup	75.00	
Honorarium	200.00	
Total	875.00	

Meals: Cost per person (approximately 30 workshop participants, speakers, and organizers)

Item	Cost/Participant	Total Cost
Fri: dinner	30.00	
Sat: breakfast	6.00	
Sat: lunch	10.00	
Sat: snack	3.00	
Sat: dinner	30.00	
Sun: breakfast	6.00	
Total	85.00	

Administrative Costs – Staff member paid \$10.00/hour

Item	Cost
Travel arrangements: planning and paying for all flights and shuttle schedules so the participant does not have to worry about this (1.5 hour/ participant)	300.00
Coordination: planning and executing the logistics for the three day workshop (15 hours)	150.00
Advertising/ Recruiting/ Mailing (10 hours)	100.00
Paper/ stamps/ pens/ office supplies/ posters/ mailing tubes/ nametags	160.00
Total	\$710.00

Grand Total: \$15,175.00*

*Although our budget request is larger than the grant opportunity we hope to get corporate sponsorship and financial assistance from the School of Informatics, Kelley School of Business (Information Systems Department), and SLIS.

Targeted Schools:

1. [Fisk University](#)
1000 17th Ave N, Nashville, TN 37208-3051
Enrollment: 872
B.S. in Computer Science
2. [Lane College](#)
545 Lane Ave, Jackson, TN 38301-4598
Enrollment: 575
B.S. in Computer Science
3. [Lemoyne-Owen College](#)
807 Walker Ave, Memphis, TN 38126
Enrollment: 1,132
B.S. in Computer Science *have a mentoring program
4. [Tennessee State University](#)
3500 John A Merritt Blvd, Nashville, TN 37209
Enrollment: 7,590
B.S. in Computer Science
M.S. and Ph.D. in Computer and Information Systems Engineering
5. [Central State University](#)
Wilberforce, OH 45384-3002
Enrollment: 3,261
B.S. in Computer Science
6. [Wilberforce University](#)
Wilberforce, OH 45384-3001
Enrollment: 750
B.S. in Computer Science
7. [Kentucky State University](#)
Frankfort, KY 40601
Enrollment: 2,541
B.S. in Computer Science and Applied Information Technology
M.S. in Computer Science
8. [Lincoln University](#)
Jefferson City, MO 65102
Enrollment: 4,031
B.S. in Applied Science in Technology, B.S Civil Engineering Technology
B.S. in Computer Information Systems

Although 9 and 10 are not in the Midwest, these schools were chosen after exhausting the list of HBCUs in the Midwest and because we have existing relationships with faculty at JC Smith University and Spelman College.

9. [Johnson C. Smith University](#)
Charlotte, NC 28216
Enrollment: 1,391
B.S. in Computer Engineering, Information Systems Engineering, and Computer Science/ Information
10. [Spelman College](#)
Atlanta, GA 30314
Enrollment: 2,026
B.S. in Computer Science and Information Systems

Speaker Bios

1. William Aspray, Ph.D.



William Aspray is Rudy Professor of Informatics and Special Advisor for Information Technology and Professional Partnerships in the Office of the Vice President for Research at Indiana University in Bloomington. He received his Ph.D. in 1980 from the University of Wisconsin-Madison. He has taught at Harvard, Pennsylvania, Rutgers, and Williams. He has also served as Associate Director of the Charles Babbage Institute, director of the IEEE History Center, and executive director of Computing Research Association. His research primarily concerns the policy and history of technology. He is the author or editor of more than ten books and 50 articles. Recent publications include *Globalization and the Offshoring of Software* (ACM, 2006, coedited with Moshe Vardi and Frank Mayadas) and *Women and Information Technology* (MIT Press 2006, coedited with Joanne Cohoon). Current projects include a book (coedited with Paul Ceruzzi) on the commercialization of the Internet and its impact on American business, a history of the computer security firm Symantec, and a literature review of what social science research tells us about the under-representation of women among IT entrepreneurs.

2. Juan Gilbert, Ph.D.



Dr. Juan E. Gilbert is an Associate Professor in the Computer Science and Software Engineering Department at Auburn University. He also directs the Human-Centered Computing (HCC) Lab. Dr. Gilbert advises 20 graduate students, of which 10 are Ph.D. students. His research is in human-centered computing with an emphasis on spoken language systems, human-computer interaction, advanced learning technologies and databases. Dr. Gilbert is a founding member of the Institute for African American ECulture (<http://www.iaaec.org/>) and he is the current president of Brothers of the Academy Institute (<http://www.brothersoftheacademy.org/>).

3. Raquel Hill, Ph.D.



Raquel Hill earned B.S. and M.S. degrees in Computer Science from the Georgia Institute of Technology in 1991 and 1993 respectively. From 1993 to 1996, she was a Member of Scientific Staff at Nortel Networks in RTP, North Carolina. In November, 2002, she received a Ph.D. in Computer Science from Harvard University. Dr. Hill was a Lecturer in the School of Electrical and Computer Engineering at Georgia Tech from November 2002 to August 2003. From August 2003 to July 2005, she was a Post Doctoral Research

Associate at the University of Illinois Urbana-Champaign, with a joint appointment with the Department of Computer Science and the National Center for Super Computing Applications (NCSA).

Dr. Hill's research interests include developing security protocols and mechanisms for wired and wireless infrastructures. She has specific interests in developing security mechanisms that leverage the use of context in environments where the context may change frequently, (i.e. pervasive computing environments).

4. Eden Medina, Ph.D.



Eden Medina received her Ph.D. in 2005 from the MIT Doctoral Program in the History and Social Studies of Science and Technology and holds degrees in electrical engineering and women's studies from Princeton University. Medina's research uses technology as a means to understand historical processes. Her most recent work addressed the history of information technologies in Latin America and the role these technologies played in creating new forms of governance and the advancement of state ideological projects. Her other interests include how information technologies affect the recording of history and the preservation of memory, particularly with

regards to human rights work. Her current book manuscript traces the history of state computer use in Chile and its relationship to ideas of modernity during the 1960s and 1970s.

Professor Medina has received grants from the Social Science Research Council and the American Council for Learned Societies, the National Science Foundation, the Charles Babbage Institute, and the Dibner Institute for the History of Science and Technology. She holds an adjunct appointment in the Center for Latin American and Caribbean Studies (CLACS). Before pursuing her Ph.D., Medina worked as an electrical engineer specializing in image processing and machine vision.

5. Christine Ogan, Ph.D.



Christine Ogan's research is in the area of social informatics that focuses on uses of new communication technologies in the United States and also in other parts of the world, with a special focus on Turkey. Of late, her U.S.-based research addresses work force issues related to technologies. Together with colleagues from the School of Journalism, she conducted a national survey of journalism educators on their uses of computer-based technologies in the classroom and the stress that is associated with the continuous updating and changing of software. Gender issues were of particular interest in that research as women experienced significantly higher technology-based stress than men.

Dr. Ogan is also part of an Indiana University-based team of researchers that has received a NSF grant to study educational environments for men and women who wish to enter information technology fields and which type of environment shows the most promise for the recruitment and retention of women.