

# Midwest Noyce Regional Conference

**Indiana University-Purdue University Indianapolis**

*Strategies for Advancing Math & Science Teaching In High Need Schools*

**April 2 & 3, 2009**

**University Place Conference Center and Hotel**

**Indianapolis, Indiana**

**IUPUI**

*Indiana University  
Purdue University  
Indianapolis*



**National Science Foundation**  
WHERE DISCOVERIES BEGIN

## ***THURSDAY, APRIL 2, 2009 ~ SCHEDULE***

*12:00 – 1:15 p.m.*

*Location: Conference Center North Hall, 1<sup>st</sup> Floor*

**After checking into the hotel, please:**

**Sign-in at the registration table . . . refreshments available at the continuous break area**

*1:30 p.m.*

*Room: Main Conference Room, 118*

*Opening Session*

*Thursday, April 2nd*

*All participants*

**Greetings – Kathleen Marrs**

Associate Professor of Biology, Assistant Director of UCASE, and  
PI of Advance Urban Learning: Teach Science, IUPUI

**Welcome – Uday Sukhatme**

Executive Vice Chancellor and Dean of the Faculties, IUPUI

**Opening Address – Joan Prival**

Program Director, National Science Foundation

2:00 – 3:15 p.m.  
Room: 232

*Breakout Session A1*  
*Thursday, April 2<sup>nd</sup>*  
*Session: PIs & CoPIs*

***Strategies for Mentoring: Supporting the Noyce Scholar***

In this session, we will learn about a conceptual framework that describes, explains, and predicts teacher concerns and behaviors. PIs and CoPIs will explore how the framework can be used to guide the support provided to Noyce Scholars during their STEM experiences in the higher education environment and as a tool to inform mentoring needs once the Noyce Scholars enter into the school environment. The interactive session will include time for discussion and questions.

**Kathy Stiles, Co-director, WestEd’s National Academy for Science and Mathematics Education Leadership**

2:00 – 3:15 p.m.  
Room: 118

*Breakout Session A2*  
*Thursday, April 2<sup>nd</sup>*  
*Session: PIs & CoPIs*

***Evaluating the Effectiveness of Noyce Programs***

Effective assessment requires careful advance planning. Presenters will offer a framework for assessment planning, and then participants will have an opportunity to use the framework in creating their own assessment plans. The planning exercise will be structured to meet the needs of directors of newly-funded Noyce programs as well as directors with more experience.

**Trudy Banta, Senior Advisor to the Chancellor for Academic Planning & Evaluation, IUPUI**  
**Gary Pike, Executive Director, Information Management & Institutional Research, IUPUI**

2:00 – 3:15 p.m.  
Room: 134

*Breakout Session A3*  
*Thursday, April 2<sup>nd</sup>*  
*Session: Noyce Scholars*

***Strategies for Interactive and Interconnected Problem-solving***

We will work in groups on an extended exercise in paper-folding to illustrate an investigative and interactive approach to problem solving, and to experience some of the ways that students construct their understanding of mathematical representations in science and mathematics. The session will include time for discussion of the different approaches and responses of the participants to the exercise.

**Patrick Morton, Professor of Mathematics, IUPUI**  
**Nancy J. Pelaez, Associate Professor of Biology, Purdue University**

3:30 – 4:45 p.m.  
Room: 232

*Breakout Session B1*  
*Thursday, April 2<sup>nd</sup>*  
*Session: PIs & CoPIs*

***Recruitment Strategies: Identifying the Noyce Scholars***

In this session, we will identify methods that have proven effective in attracting highly qualified math and science teacher candidates. The University of Toledo’s Judith Herb College of Education program UT<sup>3</sup> (UToledo.UTeach.UTouch the Future) is designed to recruit, prepare, and support individuals as they prepare to become mathematics and science teachers. We will present data from the recruitment strategies used by UT<sup>3</sup> and the recruiting shift from the traditional college student to the career changer for the Noyce Scholar. There will be time for discussion, sharing, and questions.

**Libbey McKnight, Enrollment Management Specialist, University of Toledo**  
**Andrea Milner, Visiting Assistant Professor, University of Toledo**

3:30 – 4:45 p.m.  
Room: 118

Breakout Session B2  
Thursday, April 2<sup>nd</sup>  
Session: PIs & CoPIs

**Lessons Learned on Running a Successful Noyce Scholarship Program**

How can the many aspects of Noyce Scholarship program be successfully managed from year to year, from recruiting and interviewing to following up on scholarship recipients? This session will present insight from the University of Illinois at Chicago's Robert Noyce program, now in its second round of funding. **Note:** In addition to the presentation, this session is meant to be an open discussion and forum for Midwest Noyce PIs to share their most useful strategies. *Please bring hard/electronic copies of documents, scholarship agreements, or exit interview procedures* so we may discuss aspects of your Noyce program that have worked particularly well for your university.

**Carole Mitchener, Associate Professor, Curriculum and Instruction, University of Illinois at Chicago**

3:30 – 4:45 p.m.  
Room: 134

Breakout Session B3  
Thursday, April 2<sup>nd</sup>  
Session: Noyce Scholars

**NSDL.org – NSDL Pathways - National Science Digital Library: Online Resources for Science and Math Teachers**

NSDL Pathways are built by partners who provide access to audience-specific views of NSDL resources and services (portals). For this session we will wander through some of the pathways to find standards-based websites developed for middle and high school math or science teachers. The audience will experience some of the best, hand-picked, reviewed, contextualized, teaching materials while also connecting to a community that shares resources recommended for a course like yours. Participants who bring a laptop will flag ready-to-use teaching resources that can be easily accessed from school or home. *(Laptops will be made available for this session.)*

**Nancy J. Pelaez, Associate Professor of Biology, Purdue University**

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5:00 – 6:00 p.m.  
Room: Main Conference Room, 118

Panel Forum/Reflect  
Thursday, April 2<sup>nd</sup>  
All participants

**Panel Forum – Voices from the Field**

Noyce Scholars share their experiences as beginning teachers. A question and answer panel on how PIs and mentor teachers can best support their Noyce scholars during their pre-service and inservice years.

**Share/Reflect – Kathleen Marrs**

Associate Professor of Biology, Assistant Director of UCASE, and  
PI of Advance Urban Learning: Teach Science, IUPUI

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6:15 – 7:15 p.m.  
Location: 1<sup>st</sup> Floor Conference Center Lobby

Thursday, April 2<sup>nd</sup>

**Reception and Poster Session**

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7:30 – 9:00 p.m.  
Room: Ballroom West

Thursday, April 2<sup>nd</sup>  
Dinner/Keynote Address

## **Dinner**

### **Greetings/Introduction – Kim Nguyen**

Director of UCASE Operations, and CoPI of Advance Urban Learning: Teach Science, IUPUI

### **Keynote Address – Tom Bloch, *Real Heroes***

Why would anyone trade the boardroom of a major U.S. corporation for an inner-city classroom? How do urban teachers cope? What keeps them going? Tom Bloch, the former CEO of H&R Block who became an inner-city teacher and school founder, will lead a discussion that addresses these and other questions. Bloch celebrates teachers who care and who make a lasting difference.

**Board President and co-founder of University Academy, & former CEO of H & R Block**

## ***FRIDAY, APRIL 3, 2009 ~ SCHEDULE***

7:30 a.m.  
Location: Continuous Break Area

Friday, April 3<sup>rd</sup>

### **Breakfast (continental)**

8:15 – 9:30 a.m.  
Room: Main Conference Room, 118

Plenary Session  
Friday, April 3<sup>rd</sup>  
All participants

### **Greetings and Introduction – Charles Barman**

Professor of Science & Environmental Education, IU School of Education, Indianapolis, Director of UCASE, PI Urban Educators: Robert Noyce Scholarship for Mathematics and Science Teachers

### **VIP Remarks – Pat Rogan**

Executive Associate Dean, IU School of Education, Indianapolis

### **Plenary Session – Tom Bloch, *Stand for the Best***

Is it really possible to meld one's career with a higher calling, leading to a purposeful and fulfilling life? What will be the legacy of your one and only life? Tom Bloch will offer his hard-won insights into how to teach urban students and the lessons he himself learned from these kids whose lives were so starkly different from his own. He will also explain how he and his colleagues struggled to make the charter school he co-founded work and the strategies they used to turn the school around. His school of 1,100 students has achieved almost unheard-of success; over the last five years, all but two of its graduates have gone on to college.

9:30 – 10:45 a.m.  
Room: 118

*Breakout Session C1*  
*Friday, April 3<sup>rd</sup>*  
*Session: PIs & CoPIs*

***Peer-led Team Learning: Preparing Talented Science Majors for Careers in Teaching***

Many science majors who might have an interest and talent for teaching never get an opportunity as undergraduate students to experience the rewards and challenges of teaching. IUPUI's Workshop Chemistry/Peer-led Team Learning (PLTL) and Biology Mentoring programs place talented science students into Biology and Chemistry recitation sessions. These programs not only improve the quality of science education for undergraduates, but in addition provide an excellent way to identify and recruit students who may not be thinking of a career in teaching. In addition, the programs raise awareness among faculty of the importance of recruiting and preparing future teachers.

**Pratibha Varma-Nelson, Executive Director, Center for Teaching and Learning, IUPUI**  
**Kathleen Marrs, Associate Professor of Biology, Assistant Director of UCASE, & PI of Advance Urban Learning: Teach Science, IUPUI**

9:30 – 10:45 a.m.  
Room: 134

*Breakout Session C2*  
*Friday, April 3<sup>rd</sup>*  
*Session: Noyce Scholars*

***Student Engagement in Diverse Learner Classrooms***

In this breakout session, Noyce scholars will share strategies that engage learners of all abilities in the high need classroom. We will discuss what authentic engagement means and what it looks like in the classroom as well as barriers that limit engagement of our high need students. The facilitator will review a few instructional strategies that have been found to be particularly effective in engaging students in an urban classroom.

**Tim Ricker, Teacher in Residence, IUPUI & High School Science Facilitator, Indianapolis Public Schools**

9:30 – 10:45 a.m.  
Room: 232

*Breakout Session C3*  
*Friday, April 3<sup>rd</sup>*  
*Session: Noyce Scholars*

***Secondary Science Instruction: Strategies for Content Integration through Scientific Inquiry***

This breakout session will focus on teaching inquiry-based science in the secondary setting. There has been a lot of talk about inquiry-based science in the elementary classroom, but pedagogy in the secondary science classroom has been largely left up to the practitioner. Despite the fact that Indiana's Core Standards have an entire standard devoted to the nature of science many teachers do not know the best methods to use when addressing the content in their secondary classrooms. We will focus on how to integrate the large amount of content in a high school science course while still preserving the integrity of inquiry-based instruction.

**Jennifer Hicks, Science Curriculum Specialist, Indiana Department of Education**

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*Time: 10:45 – Noon*  
*Room: Main Conference Room, 118*

*Plenary Session*  
*Friday, April 3<sup>rd</sup>*  
*All participants*

**Introduction – Jane True**

Graduate student, University Coach – Transition to Teaching, IU School of Education, Indianapolis

**Plenary Session: Ken Tobin, *Becoming a Culturally Adaptive Teacher***

When teaching and learning are considered as cultural enactment there are implications for teachers, students, teacher educators and researchers. In the presentation I describe what we have learned from a program of 15 years of research in urban schools and identify findings that can transform the quality of science education in formal and informal settings. Cogenerative dialogue and coteaching will be presented as activities that have produced numerous changes to science participation and achievement and expanded the possibilities for life out of school. The centrality of emotions to producing and sustaining success in learning will be an integrating theme of the presentation. The sociocultural framework I use to make sense of science education challenges many of the policies that structure science education throughout the United States and indeed the world. In the presentation I address how teachers, students, parents, school leaders and policy makers can work within existing systems to transform them, attain success and pave the road for reforms that are dire necessities.

**Presidential Professor, the Graduate Center of City University of New York, and Distinguished Teaching Scholar, Recognized by the National Science Foundation, 2004**

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*Time: 12:00 – 1:00 p.m.*

*Location: Scholars Hall South*

*Friday, April 3rd*

*Lunch & Wacky Survey*

**Lunch & some fun**

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*Time: 1:30 – 2:30 p.m.*

*Room: Main Conference Room, 118*

*Closing Session*

*Friday, April 3<sup>rd</sup>*

*All participants*

***Assessing the Present and Forging the Future Direction of the Robert Noyce Teacher Scholarship Program***

Frances Lawrenz will offer a description of the current Noyce programs and share the effect of the Noyce scholarship money in terms of the opinions of the districts and the scholars. Joan Prival will provide an update on the Robert Noyce Teacher Scholarship Program, focusing on new components of the Noyce Program introduced under the America COMPETES Act and the expanding Noyce community.

**Joan Prival, Program Director, National Science Foundation**

**Frances P. Lawrenz, Associate Vice President for Research, University of Minnesota**

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