2009-2010 Science

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### Mission

The IUPUI School of Science provides outstanding basic science education for all IUPUI students, education in depth for students in our School, and engages in fundamental and applied research in the physical, biological, mathematical, and psychological sciences in order to increase scientific knowledge and advance the development of the life sciences at IUPUI and in the State of Indiana.

### Goals and Objectives

1. Build a Strong and Diverse Faculty

1. Build a strong and diverse faculty

   **Campus Planning Theme:** Teaching and Learning, Research, Scholarship and Creative Activity

   **Secondary Goals:**

   **Sub Unit:** None

   **Time Frame:** on going

### Actions taken for 2009-2010:

- Hired 13 new teaching and research faculty based on potential for research excellence (3 in the Department of Biology, 2 in Chemistry and Chemical Biology, 1 in Computer and Information Science, 4 in Mathematical Sciences, and 3 in Psychology). Two new hires were female faculty.

- Hired a full professor in mathematics education funded through the Urban Center for the Advancement of STEM Education (UCASE) to collaborate with the IU School of Education.

- Hired 1 new Senior Lecturer in the area of actuarial science in the Department of Mathematical Sciences.

- Continued collaborated with the IU School of Medicine to create research programs for School of Science faculty and graduate students in the Health Information and Translational Science (HITS) Building.

- Continued financial plan that will permit ongoing hiring of faculty in strategic areas.

- Many new faculty hires came with funding or received external funding shortly after arriving.

### Evidence of Progress for 2009-2010:

- The School hired 44 new faculty in the last 5 years who will contribute significantly to the teaching and research missions. The start-up packages for new faculty were competitive with national standards.

- Hired two new chairmen, one in Biology and another in Earth Sciences, who will begin in the upcoming school year.

- External funding has increased by 40% over the previous fiscal year. This is attributable in part to the School’s focus on hiring research-intensive faculty with post doctoral experience or who have established research funding.

- Publications
Activities planned for 2010-2011:

- Continue to manage financial resources to ensure strong fiscal health.
- Continued strategic planning for hiring and retaining faculty in critical areas across the school.
- Hire an Associate Dean for Research and Graduation Education from within the university who will contribute to the School’s growth in external funding and graduate programs.
- Identify campus resources, external resources and collaborative opportunities for faculty to pursue their research and scholarly activities.
- Continue hiring faculty in areas of strategic need to cover resignations and retirements. New faculty hires will be limited until additional research space becomes available.
- Phase I has been approved for the new Science and Engineering Laboratory Building (SELB), which will be used for research and instructional laboratory space.
- Discussions are ongoing for Phase II of SELB tentatively scheduled to begin two years after Phase I.
- Implement a research bonus plan to encourage external funding to recruit and retain faculty.
- Continue to increase school level support for graduate student funding.

2. Develop Nationally Recognized Undergraduate Programs in Select Areas

1. Maintain and develop undergraduate programs that provide students with the learning skills and knowledge essential for employment and life-long learning.

   Campus Planning Theme: Teaching and Learning, Best Practices
   Secondary Goals:
   Sub Unit:
   Time Frame: on going

Actions taken for 2009-2010:

We continued to promote and expand new degree programs in areas of demand:

- B.S. in Environmental Science in collaboration with SPEA and the School of Liberal Arts.
- B.S. in Interdisciplinary Studies.
- B.S. in biotechnology, in conjunction with four corporate partners (Eli Lilly, Roche Diagnostics, Dow AgroSciences, Baxter Pharmaceutical Solutions), reaffirmed articulation between Ivy Tech Indianapolis Associate in Science program in biotechnology, supporting transferability of credit hours.
- B.S. in Forensic and Investigative Sciences in collaboration with the Schools of Law and Public and Environmental Affairs.
- Combined B.S./B.S. in physics and electrical engineering.
- Began work on developing a new B.S. interdisciplinary program in Neuroscience.

Continue to use and develop innovative pedagogical practices and other educational experiences that promote student learning and engagement:

- Just-in-Time Teaching (JITT) in biology, chemistry and physics
- Peer Lead Team Learning (PLTL) in chemistry
- Computer-based testing and homework systems in chemistry, mathematics, physics, and psychology
- Transformation of Psychology B105 (Psychology as a Biological Science)
- Extensive undergraduate involvement in research
- Service learning opportunities

Completed articulation agreements with Ivy Tech covering Biology, Chemistry, Mathematics and Psychology.
Collaborated with School of Education to establish scholarship opportunities for students pursuing certification to teach science and mathematics.

Submitted application to the National Science Foundation STEP Program (Science Talent Expansion Program), Sept 2009

Submitted application to the Howard Hughes Medical Institute (HHMI) for Undergraduate Course Transformation, October 2009

Evidence of Progress for 2009-2010:

Substantial increase in undergraduate enrollment and high student quality.

- Admitted class increase from 465 in Fall 2007 to 586 in Fall 2008
- Enrolled class increase from 215 in Fall 2007 to 263 in Fall 2008
- Mean SAT score of enrolled class of 1139
- Mean High School GPA of enrolled class 3.63

In many cases, evidence is provided by student enrollment and participation.

- Enrollment in our program in forensic and investigative science
- Enrollment in our program environmental sciences
- Enrollment in our double degree programs in physics/engineering.
- Participation in undergraduate research projects
- Student publication of research papers in collaboration with faculty mentors
- Participation in service learning projects

Notification of Award: National Science Foundation STEP (Science Talent Expansion Program), March 2010, (5 year, $1.99 million)

Activities planned for 2010-2011:

Continue to develop new programs and educational methods that attract students in areas of high need and promote learning and engagement

- B.S./M.S. 5 year program in physics/electrical engineering
- Develop cooperative education opportunities for science students interested in gaining experience in industry before graduation
- Improve capstone experiences
- Promote Interdisciplinary Studies and Biotechnology programs to increase enrollment
- Work with Ivy Tech to promote articulated degree programs
- B.S./M.S. 5 year program in forensic and investigative sciences

Expand opportunities for science students to pursue careers in secondary education, including 4-year programs leading to a Baccalaureate degree and licensure as a secondary school teacher in biology, chemistry, Earth science, mathematics, and physics.
Begin planning and implementation of National Science Foundation STEP (Science Talent Expansion Program) activities, Dec 2010.

2. Increase overall retention and graduation rates by 10%.

**Campus Planning Theme:** Teaching and Learning

**Secondary Goals:**

**Sub Unit:** None

**Time Frame:** 2002-2006

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**Actions taken for 2009-2010:**

- All the actions in Objective 1
- Supported undergraduate research students financially, including students in the Diversity Scholars Research Program
- Enhanced and expanded activities of the Math Assistance Center (MAC)
- Enhanced and expanded the Chemistry Resource Center (CRC)
- Expanded mentoring in Psychology B104
- Hired several new advisors (Dean’s office, psychology, biology)
- Closer ties with University College counselors
- Enhanced scholarship support (Dean’s Beginning and Continuing scholars, health and life science scholarships, scholarships for secondary education candidates)
- Recognized students who have performed well in gateway science and math courses, regardless of school (the SOS “A” Convocation)
- Continued to improve support for Women in Science House (increased subsidy, new RA)
- Support for student organizations, including the seven departmental clubs, and the Psi Chi Honor Society
- Psychology peer-advising office
- Continued expanded communications with late and unregistered students

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**Evidence of Progress for 2009-2010:**

- 47% increase in baccalaureate degrees conferred since 03-04
- Women in Science House fully occupied, with 40% of the rooms occupied by returning students
- Almost perfect retention of Dean’s Scholarship awardees (>90%)
- Upward trajectory in retention rates (all categories)

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**Activities planned for 2010-2011:**

- All the actions mentioned above
- Continue to expand MAC, Chemistry Resource Center, Psychology mentoring, and other supplemental instruction.
- Proactive efforts to reenroll students who have "stopped out."
- Continue to expand opportunities for students to work on campus.
- Work with campus on creation of the Honors College
- Work with campus partners to implement the RISE initiative.
- Continue to focus on reducing DFW rates in courses with high attrition.
- Initiate use of alumni mentor network.
- Creation and launch of a new Learning Environment, the Biology Resource Center located in Taylor Hall, 2025
A. Staffed 40 hours per week with undergraduate peer mentors for five undergraduate Biology courses (Biology K101, K103, Anatomy, Human Genetics, Physiology).
  
   Begin planning for new STEM Summer Bridge Program for launch in Summer 2011

☐ 3. Gain external recognition for our undergraduate programs
   
   Campus Planning Theme: Teaching and Learning
   
   Secondary Goals:
   
   Sub Unit: None
   
   Time Frame: Ongoing

Actions taken for 2009-2010:

   - Enhanced connections with schools
   - Enhanced connections with admissions office
   - Continued to sponsor events involving students in K-12 and teachers: High School Mathematics Contest, Genetic Update Conference, High School teachers conferences in psychology and forensic science
   - Created new High School Programming Contest
   - Sought internal and external funding for new and continuing programs
   - Began major upgrade of school web site
   - Outreach activities associated with individual departments, centers and programs, e.g., the Center for Earth and Environmental Science

Submitted application to the National Science Foundation STEP Program (Science Talent Expansion Program), Sept 2009 (funded, March 2010)

Submitted application to the Howard Hughes Medical Institute (HHMI) for Undergraduate Course Transformation, October 2009 (not funded)

Evidence of Progress for 2009-2010:

   - Undergraduate enrollment up 26% in 5 years
   - High participation in High school math contest, programming contest
   - Forensic science for HS teachers conference well attended, popular
   - NIH Support for Bridges to the Baccalaureate program

Notification of Award: National Science Foundation STEP (Science Talent Expansion Program), March 2010, (5 year, $1.99 million)

Activities planned for 2010-2011:

   - Same as above actions
   - Capitalize on IUPUI as the place to study a wide range of health-related professions
   - Work with admissions and other campus offices in support of enrollment shaping initiative.
   - Presentations to business and corporate groups, schools, and others
   - Revitalize Dean’s advisory committee
   - Complete upgrade of school web site
   - Acquire data on student success in job search and graduate/professional admissions
• Begin planning and implementation of National Science Foundation STEP (Science Talent Expansion Program) activities, Dec 2010, aimed at developing and expanding nationally recognized undergraduate programs in Just in Time Teaching and Peer Led Team Learning

☐ 4. Increase diversity of undergraduate student body and faculty
   Campus Planning Theme: Teaching and Learning, Campus Climate for Diversity
   Secondary Goals:
   Sub Unit: None
   Time Frame: 2002-2006

   Actions taken for 2009-2010:
   • Continue to support and participate in the Diversity Research Scholars Program (DSRP)
   • Continue to support and participate in the Louis Stokes Alliance for Minority Participation (LSAMP) program
   • Continue to support and participate in the McNair Scholars program
   • Expand support for and programs associated with Women in Science House (WIS)
   • Created diversity council, began creation of diversity plan

   Evidence of Progress for 2009-2010:
   • CTE awards for Women in Science and Diversity Scholars Research Program
   • Received Bridges to the Baccalaureate grant from NIH
   • Minority representation increased from 15% to 18% over last 5 years

   Activities planned for 2010-2011:
   • Continue above actions
   • Complete diversity action plan
   • Collaborate with Ivy Tech to expand transfer of minority students in the life sciences (Bridges to Baccalaureate program)
   • Apply for NSF funding under S-STEM program supporting scholarships aimed at increasing diversity among science and math majors
   • Begin collaboration with the Norman Brown Diversity and Leadership Scholars Program, specifically with seeking graduate student mentorship of undergraduate students.
   • Recruitment strategies were developed to support student recruitment.

☐ 5. Revisioning Student Services in Science: Creation of the Office of Academic Affairs and the Office of Student Affairs
   Campus Planning Theme: Teaching and Learning
   Secondary Goals:
   Sub Unit:
   Time Frame: on going

   Actions taken for 2009-2010:
   • Implemented Science Program Fee for undergraduate science majors to support the creation of the Office of Student Affairs.
- Planned shared office space with the Math Assistance Center (MAC). (The MAC and Office of Career Development Services will be located in the basement of Taylor Hall in Fall 2010.)
- Began updating the Science Careers website for posting jobs and internships for current students and alumni.
- Recruitment strategies were developed to support student recruitment.
- Submitted application to the National Science Foundation STEP Program (Science Talent Expansion Program), Sept 2009 to expand offerings of internships and career development services in the School of Science

Evidence of Progress for 2009-2010:

- Recruitment marketing pieces were developed and will be sent monthly beginning Fall 2009 for the 2010 direct admits.
- New staff positions were created for the Office of Student Affairs and the Office of Career Development Services.
- Began participation with Utalk, software purchased by the Office of Enrollment Services to assist with recruitment efforts.
- Notification of Award: National Science Foundation STEP (Science Talent Expansion Program), March 2010, (5 year, $1.99 million), which provides funding for internships and career development services in the School of Science

Activities planned for 2010-2011:

- Aggressively market to prospective students, working in collaboration with Departments, by mailing various marketing pieces monthly to the 2010 direct admit applicants. Continue to develop new and innovative marketing pieces, exploring electronic media.
- Activities and programs will be created to support student retention in the areas of academic and student affairs.
- Establish an Office of Career Services to foster collaborations with industry to create more internship, research, and employment opportunities for undergraduates. Office space will be located in the basement of Taylor Hall once renovations are complete.
- Launch the Career Services website.
- Grants and proposals will be submitted to support these activities.
- Develop the Office of Student Affairs, with office space located in the basement of Taylor Hall following renovations.
- Develop recruitment plans for future students.
- Develop recruitment strategies in Utalk.
- Develop retention plans for current students.
- Implement activities of the National Science Foundation STEP (Science Talent Expansion Program); work with PI and Co-PIs, internal and external advisory board members to develop and expand internships and career development services in the School of Science

1. Develop and expand academic programs of high scientific and national significance that build on current strengths

   Campus Planning Theme: Teaching and Learning, Research, Scholarship and Creative Activity

   Secondary Goals:

   Sub Unit: None

   Time Frame: Ongoing
Actions taken for 2009-2010:

- Continued Centers of Excellence in strategic areas (Center for Excellence in Biocomputing, Center for Mathematical Biosciences, Center for Visualization and Imaging, Center for Nanoscale Imaging, Center for Evidence-Based Psychiatric Practices, Center for Earth and Environmental Sciences, Center for Regenerative Biology, Center for Assertive Community Treatment, Center for Membrane Biosciences, Center for Urban Health, and the Center for Integrated Nanosystems Development Institute).
- Earth Sciences Ph.D. Program has been approved.
- Ongoing meetings with academic counterparts and graduate deans at Purdue West Lafayette to move toward greater autonomy of graduate programs.

Evidence of Progress for 2009-2010:

- Core research facilities have been funded.
- Continued renovations of buildings to modernize and increase classroom space, teaching laboratories, and research laboratories.
- Hired new faculty, all of who are research-active and teach undergraduate and graduate courses.

Activities planned for 2010-2011:

- Ongoing discussions with administration at Purdue West Lafayette and the Indiana Commission on Higher Education to increase autonomy of graduate programs.
- Continue to safeguard financial resources to allow ongoing expansion of faculty and programs.
- Revisit articulation between Science and Kelley School of Business regarding dual M.S. and M.B.A. degree programs.
- Continue to identify and forecast national research trends as they impact graduate training and employment opportunities.

2. Increase annualized external funding for research
   
   Campus Planning Theme: Research, Scholarship and Creative Activity
   Secondary Goals:
   Sub Unit: None
   Time Frame: Ongoing

Actions taken for 2009-2010:

- Identified emerging research directions and used existing strengths to capitalize on them
- Hired several new faculty, are research-active and have existing external funding or have potential to secure external funding.
- Used centers of excellence and multidisciplinary activities as a catalyst to increase external funding
- Continued policy of using indirect cost recovery to incentivize faculty efforts, increase external funding, and enhance graduate student support.

Evidence of Progress for 2009-2010:
Maintained steady external funding for the 2008-2009 fiscal year with a trend toward a substantial increase in funding between July and September 2009.
An increase of 11% in submitted proposals (155 to 172) from the 2007-08 to the 2008-09 fiscal year.

Activities planned for 2010-2011:
- Continue to focus on recruiting quality faculty hires with existing funding or with potential to become independently funded.
- Effectively mentor new faculty in grant writing to increase numbers of applications for external funding.
- Build the office of External Development and increase collaboration with the IU Foundation to identify foundation, corporate and other non-governmental sources for research and funding support.
- Identify long-term strategies to expand external funding of research centers.
- Plan for additional research space in new building that will permit expansion of research programs and external funding.

3. Expand and improve research and graduate education

**Campus Planning Theme:** Research, Scholarship and Creative Activity
**Secondary Goals:**
**Sub Unit:** None
**Time Frame:** Ongoing

Actions taken for 2009-2010:
- All items in sections 1 and 2
- Expanded recruitment to graduate programs
- Sought external funding for graduate education
- Implement Year 2 of the National Science Foundation GK-12 program (a Graduate Training Grant funded by the NSF Division of Graduate Education), selecting and funding 11 graduate students from Biology, Chemistry, Earth Sciences, Computer Sciences, and Physics to work in K-12 schools for the 2009-2010 school year

Evidence of Progress for 2009-2010:
- Graduate degrees conferred have increased by 76% over 5 years (from 98 to 172).
- Six signature centers funded with Science faculty as PIs. Including significant funding for graduate student support.
- Faculty and research from mathematics and computer science have occupied space in the HITS building leased from the IUSM.
- New GAANN proposals were submitted.
- Continued strong publication record by faculty and graduate students.
- Graduate Office funded two Teaching Assistants through a new program.
- School of Science GK-12 Fellows implement research-based activities in classrooms and outdoor classrooms. Two GK-12 Fellows (Earth Sciences) selected to present the results of their project at the AAAS meeting in San Diego. Six GK-12 Fellows run a workshop on hands on science at the HASTI (Hoosier Association of Science Teachers) meeting, February 2010. Two GK-12 fellows (Biology) selected to present as the Plenary Panel at the National GK-12 Meeting, Washington DC. One peer-reviewed manuscript published in January 2010 on bringing genetics into the middle school classroom. One GK-12 Fellow implements a school wide project on lead levels in soil at the Arsenal Technical High School campus. High School students host a school-wide presentation do discuss their findings to the students, faculty, and invited community members.
Activities planned for 2010-2011:

- All items in sections 1 and 2
- Make graduate student funding available to departments earlier, so that funding is known before offers must be made to prospective students.
- Continue to work with the Graduate School and upper-level administration to seek permanent budget lines for TA stipends.
- Working to increase graduate student support (through indirect cost recovery, additional TA stipends, and RIF grants proposal) and standardize stipends across all Departments.
- Continue and seek new areas for collaboration with the IU School of Medicine on use of research space, joint hires and other strategic areas.
- Encourage departments to submit GAANN proposals.
- Planning for new building to incorporate research space, a modern vivarium, and office for research faculty, graduate students and postdoctoral fellows.
- Ongoing review of the use of space and research infrastructure by the research centers in the School.
- Continue to expand research cores and centers, and develop administration of a space allocation policy for efficient use of space for research facilities.
- Four signature centers continue to receive funding from the Office of the Vice Chancellor for Research. One additional Center was approved for continued "signature center" status for five years.
- Recruit and select 11 new and returning GK-12 fellows for Year 3 of the National Science Foundation GK-12 program, from Biology, Chemistry, Earth Sciences, Psychology, and Physics to work in K-12 schools for the 2010-2011 school year.

4. Enhance External Development Marketing / Public Relations / Community Outreach

1. Marketing / Public Relations / Community Outreach

   Campus Planning Theme: Civic Engagement
   Secondary Goals:
   Sub Unit: None
   Time Frame: Ongoing

Actions taken for 2009-2010:

To meet the marketing, public relations and special event needs of the School's student recruitment, alumni, development and general initiative:

<!-[if !supportLists]--> - <!-[endif]--> Worked with external partners: PIVOT Marketing, Cox Zimmerman Public Relations, Jill Meadows Consulting, Cindy Fox Aisen, Brian Drumm and John Gentry Photography to establish and implement marketing initiatives.

<!-[if !supportLists]--> - <!-[endif]--> Hired the School's first full time Director of Marketing and Public Relations and Web Specialist.

Evidence of Progress for 2009-2010:

<!-[if !supportLists]--> - <!-[endif]--> Underwent branding initiative through PIVOT Marketing.
Created the School’s first ever International Marketing Recruitment piece, designed for undergraduate uses.

Created Graduate recruiting pieces for the Departments of Chemistry and Psychology.

Created Undergraduate recruiting pieces for the Departments of Psychology, Computer Science and Biology, as well a school wide undergraduate piece.

Integrated marketing and publicity efforts into ongoing K-12 student outreach and recruitment activities including: the Biology Department’s Genetics Conference, the Department of Psychology neuroscience Brian Bee, the Department of Mathematics partnership with the International Math Bee and the Department of Computer Science’s Computer Science Day Contest.

Audited remaining K-12 outreach efforts at the department level and branded them under the Momentum: Advancing Scientific Minds initiative on the School of Science website.

Launched new website for the School of Science.

Launched Facebook and Twitter presence for the School of Science.

Created a photography database for the school in Zenphoto.

Created web template for conference use by researchers in school.

Created web template for accepting online RSVPs through school of science website.

For Special Events: integrated a common visual theme throughout the even, improved signage and improved event flow for School of Science Honors Ceremony; launched Science on Tap, a community and alumni outreach event; integrated new faculty into the Emeritus Faculty Brunch.

Activities planned for 2010-2011:

- Continue research into School of Science brand, and improve definition of goals of marketing and public relations campaigns.
- Create comprehensive marketing plan based on research for student recruitment activities, outreach activities, and fundraising activities of the school.
- Launch the design and begin implementation for new web templates and sites for programs and events of the school.
- Increase publicity which highlights student and research excellence in the school, with a focus on local markets (within the state of Indiana).
- Hire a Communications Writer to take over writing services currently being outsourced.
- Integrate strategic assessment into activities of the marketing office.

2. Development

Campus Planning Theme: Civic Engagement
Secondary Goals:
Sub Unit: None
Time Frame: Ongoing

Actions taken for 2009-2010:

- Raised $363,805.78 through 436 donors
- Developed preliminary Case statement for Capital Campaign
- Convened Dean’s Leadership Council Capital Campaign Advisory Group to assist in preparations for the IUPUI 2010 public launch of our Capital Campaign
- Achieved HR approvals to hire two additional development directors and replace assistant development director.

Evidence of Progress for 2009-2010:

- Recruited committee of seven community leaders to assist school with setting campaign goals and connecting school with possible donors or interested community members.
- Supplemented IUF end of year mailing with internal direct mail drop
- Began process for hiring two development director positions. As of June 30th final interviews had been held with candidates.

Activities planned for 2010-2011:

- Hire a Director of Development, Director of Development and Alumni Relations and a Development Assistant to staff the office of development.
- Finalize Case statement for School of Science in advance of public phase of campaign launch, October 2010
- Through new officers enhance the work of the annual fund, the major gifts office and the planned gifts office to meet campaign goals and annual campaign targets.

3. Alumni Programming
Campus Planning Theme: Civic Engagement
Secondary Goals:
Sub Unit: None
Time Frame: Ongoing

Actions taken for 2009-2010:

- Launched a young alumni group subcommittee of the board. Used Young Alumni Group as a way to engage recent graduates in alumni activities, providing leadership and social opportunities for group
- Featured alumni stories on website – both for recent graduates and more established alumni
Continued ongoing alumni programming in partnership with alumni association on IUPUI campus

- Reformat current alumni board to increase quality of volunteer experience

Evidence of Progress for 2009-2010:

- Recruited 12 new members to alumni group, including 10 through summer mailing to new graduates
- Hosted first young alumni group event at Crackers Comedy Club
- Launched Science on Tap as an alumni and community outreach social activity
- Integrated Alumni Facebook page into school’s marketing and PR activities. Used Facebook as RSVP resource for alumni events
- Highlighted two established alumni prominently on home page of school of science site.
- Awarded Distinguished Alumnus Award to Richard Reed, Psychology Graduate
- Continued traditions of Freshmen BBQ, Dean’s Dean, Holiday Night at the Children’s Museum and Graduating Seniors Reception with IUPUI alumni association.
- Reformatted alumni board meetings to be more project based than procedure based
- Instituted term limits to alumni board of directors and awarded first three lifetime emeritus status designations to board members rotating off the board.
- Recruited two established alumni to form Dean’s Executive Alumni Group

Activities planned for 2010-2011:

- Recruit members to three main alumni groups: Alumni Board, Young Alumni Group, Dean’s Executive Alumni Group
- Expand Science on Tap activities to serve both alumni and development needs.
- Expand networking through internet activities such as Facebook, LinkedIn and Twitter
- Continued use of alumni profile stories in online and print publications
5. Strategic Planning

☑ Strategic Plans for the School of Science

Campus Planning Theme: Best Practices
Secondary Goals:
Sub Unit:
Time Frame:

Actions taken for 2009-2010:

The faculty and administration continue to implement plans developed during 2008 with new leadership in the School’s Dean’s Office.

- Actively recruited 12 new faculty across the School, many who brought with them external funding or who show promise to receive external funding.
- Implemented a new student program fee to support a student development and career center in the School.

Evidence of Progress for 2009-2010:

- The School of Science is now on firm financial footing, with improved performance in undergraduate and graduate education and research.
- Continued increase in undergraduate enrollment both in terms of quality (evidenced by increased average SAT scores and high school class rank) and number, with increases in undergraduate credit hours.
- Continued increase in number of graduate students.
- Reorganization of the academic organizational structure of the Dean’s Office.

Activities planned for 2010-2011:

The faculty and administration will continue to implement plans developed during 2008.

- Begin to build an adequate support staff in several areas of the School.
- Continue to build upon the signature centers, with two new centers recently funded: the Center for Urban Health and the Center on Integrated Nanosystems Development Institute. The Center for Earth and Environmental Sciences has been reapproved.
- Strengthen targeted recruitment efforts to increase quality, quantity and diversity of full-time students.
- Work with faculty and other units on campus to improve the curriculum, with a particular focus on the development of new honors courses and curriculum.
- Support academic advisor training.
- Significantly increase alumni and community philanthropic support.
- Branding the School of Science as a school of choice for high-ability students who seek a quality undergraduate and graduate education in science.

Fiscal Health
Reallocation Plan

Other Question(s)

1. Please describe faculty/staff participation in the planning process in your unit. What factors strongly influence your budget and planning priorities? Please give examples, which might include attracting and retaining undergraduates, strengthening graduate programs, building collaborative partnerships, increasing diversity in faculty and student populations.

Faculty/Staff Participation in Planning Process:

The 2009 development of School of Science Strategic Plan is organized around 4 main goals to promote the mission of the school and campus: Build a strong and research active faculty, Increase faculty research productivity, Aggressively recruit and retain high-ability students, Significantly increase alumni, community, and philanthropic support.

Committees that meet regularly to plan provide leadership to meet the goals in the School’s strategic plan include bi-weekly School of Science Chairs, Deans, and Directors meetings, monthly Steering Committee meetings with faculty and Associate Deans, Educational Policies Committee, Staff Council, Advisors meetings, Technology Committee, Nominations and Awards Committee, quarterly SOS Dean’s Leadership Council meetings with members of external advisory board and development staff and a newly formed School of Science Alumni Board, its Young Alumni Group, and a Dean’s Executive Alumni Council.

Factors influencing budget and planning priorities:

The School of Science at IUPUI is the largest academic unit outside of the Indiana University School of Medicine and the largest producer of undergraduate credit hours on campus. Planning and budgeting priorities are influenced set of common considerations:

- Enrollment projections, including tuition income, and the need to fund new academic initiatives, scholarships and fellowships to support retain and graduate a diverse and high-quality student body of undergraduate and graduate students.
- Indirect cost recovery from externally funded research, and financial investments needed to initiate, grow, and sustain research programs
- The need to provide competitive start-up packages and research facilities to attract, reward, and retain faculty in all departments and to promote interdisciplinary research programs through Signature Centers and other initiatives
- A commitment to regular upgrades to facilities, equipment, technology, to improve teaching and research programs, responsiveness to specific needs from faculty, students, or the community groups or campus initiatives

In consultation with the Department Chairs and Steering Committee the School of Science recently implemented a number of new policies to ensure transparency in the way the School manages its fiscal affairs.

- The School’s fiscal staff, working with the Dean, developed a set of internal procedures to gain a clear understanding of the cost structure of all operational aspects of the school, and to became more confident in controlling cost and make income and expenditure projections and develop a strategy to ramp up the School’s reserve to ensure sufficient base funding.
- Working with faculty and university advisory groups, the Dean developed a program plan and funding mechanism for a new Science and Engineering laboratory building (SELB I / II)
- Given that tuition income will be an increasingly important component in our total resource base, a new Office of Student Services was recently instituted to (1) accelerate the recruitment of high-ability students; (2) provide better services in academic advising and career counseling, with the goal of increasing the retention and graduation rate of all students enrolled; and (3) develop more internships, externships, and research opportunities for our undergraduates.
- In anticipation of the need to generate more philanthropic and community support, a new Office of Development and External Affairs has been charged to Significantly increase alumni, community, and philanthropic support to (1) Reach or exceed School of Science’s goal of raising $5.5M in the upcoming IMPACT Campaign, (2) Double alumni annual giving from 4% to 8%, (3) Build a $2M scholarship endowment for the Dean of Science Scholarship Program, the Women in Science Scholarship Program, and other school-based scholarship programs, (4) build a $2M scholarship endowment for graduate student support, and (5) Raise funds to establish at least one endowed professorship for each department.
2. How do the plans within your unit align with the President’s Principles of Excellence and the Chancellor’s Guideposts? Please describe your process for integrating your unit’s plans with those of the campus.

Indiana University President’s Principles (I-X) and IUPUI Chancellor’s Guideposts (1-12) (Working Draft 10-10)

I. An Excellent Education
1. Continue to improve educational outcomes, from freshman success through graduation.
   - Recruit, admit and support a diverse, talented undergraduate student body, increase scholarships and fellowships; provide academic support through summer bridge programs, freshman work program, Peer mentoring, academic resource centers; high quality academic advising to support a clear path to 4-year graduation.
   - Offer rigorous undergraduate courses and laboratories that exemplify an understanding of how students learn science most effectively, such as Just-in-Time Teaching (JITT), Peer-Led Team Learning (PLTL), Peer mentoring; research- and project-based laboratories.
   - Expand undergraduate research opportunities through the Life-Health Sciences Internship (LHST), Undergraduate Research Mentoring (URM) program, Diversity Research Programs for undergraduates (LSAMP, McNair).

II. An Excellent Faculty
2. Continue to enhance faculty quality through recruitment, hiring, and support for teaching and scholarship.
   - Continue to build a strong and research-active faculty, through strategic hiring of disciplinary and interdisciplinary appointments, especially in areas that support IUPUI’s life and health sciences mission.
   - Provide competitive start-up packages, adequate lab space and support personnel to facilitate faculty excellence developing and sustaining a record of teaching, research, and service leading to promotion, tenure and advancement.
   - Increase diversity of the faculty in the School of Science and increase the proportion of women faculty at more senior ranks.

III. Excellence in Research
3. Advance achievements in graduate education and research.
   - Position the School of Science as a strong contributor to IUPUI bioscience research community through funding and support of Signature Centers, investment in areas of basic and translational research in collaboration with the IU School of Medicine, the Department of Biomedical Engineering, and other research groups on campus.
   - Increase faculty research productivity through competitive start-up packages, adequate lab space and support personnel, strengthen research infrastructure, enhance interdisciplinary core research facilities, increase research incentive programs.
   - Begin construction of Science and Engineering Laboratory Building (SELB), Phase I, secure approval for Phase II.
   - Enhance graduate training grants such as the NSF GK-12 Program, new graduate assistantships, fellowships, graduate and postdoctoral training programs.
   - Offer graduate education programs to meet the changing demands in health sciences and technology, 5-year BS/MS programs, Pre-professional MS degree, graduate certificates in computer sciences, new PhD programs in Applied Earth Sciences and Biostatistics.
   - Secure approval for an independent Purdue Ph.D. degree, site-approved for IUPUI

IV. The International Dimension of Excellence
4. Continue to deepen international partnerships and increase international activity.
   - Expand international research experiences for faculty and students by developing collaborative, international research experiences (two examples in Psychology newly funded through the IUPUI International Development Fund).
   - Develop International 2+2 programs: As part of Sun Yat-sen University (SYSU) strategic alliance, the new 2+2 dual degree program between the CIS department and the School of Software of SYSU, signed last summer, is the first such program on the IUPUI campus.
   - Develop international study abroad opportunities for students, ranging from year-long to short, intensive periods of study.
V. Excellence in the Health Sciences and Health Care
5. Continue to improve educational outcomes in all health sciences programs.
   - School of Science Signature Centers are collaborative between School of Science departments or with the School of Engineering and Technology, Dentistry, or Medicine to advance excellence in Life and Health Science and Health Care (Assertive Community Treatment Center, Center for Biocomputing, Center for Mathematical Biosciences, Center for Membrane Biosciences, Center for Nuclear Magnetic Resonance, Center for Regenerative Biology and Medicine, Center for Visual Information Sensing and Computing, Integrated Nanosystems Development Institute, Center for Urban Health).
   - Educational outcomes for undergraduates in all health sciences programs continue to improve in terms of successful acceptance to Schools of Medicine, Dentistry, Nursing, Osteopathic Medicine, Graduate programs, careers in biomedical/health science sector.

VI. Excellence in Engagement and Economic Development
6. Continue to enhance civic engagement, including economic development.
   - Improve Indiana workforce and economic development through School of Science Signature Centers, STEM teacher preparation programs coordinated via the Urban Center for the Advancement of STEM Education (UCASE): The Woodrow Wilson Indiana Teaching Fellowship, The Robert Noyce Teacher Scholarship and Internship Program, The Indianapolis Urban Teacher Residency United Teaching Fellowship.

VII. Excellence in Advancement
7. Increase the resource base through philanthropy, concluding a successful development campaign, and other strategies.
   - New Office of Development and External Affairs launched to (1) generate more philanthropic and community support, (2) coordinate development and publicity efforts of the School, (3) increase outreach efforts to alumni, and (4) articulate and publicize a bold academic vision to better position the School for the IUPUI IMPACT Campaign.
   - Significantly increase alumni, community, and philanthropic support to (1) Reach or exceed School of Science's goal of raising $5.5M in the upcoming IMPACT Campaign, (2) Double alumni annual giving from 4% to 8%, (3) Build a $2M scholarship endowment for the Dean of Science Scholarship Program, the Women in Science Scholarship Program, and other school-based scholarship programs, (4) build a $2M scholarship endowment for graduate student support, and (5) Raise funds to establish at least one endowed professorship for each department.
   - Build an engaged, contributing base of alumni and community members to (1) Provide opportunities for alumni engagement through the School of Science Alumni Board, its Young Alumni Group, and a Dean's Executive Alumni Council, (2) Facilitate opportunities for community engagement through the Dean's Leadership Council (3) Engage alumni groups in programming promoting professional and social networking, mentoring opportunities, scholarships and service awards, and (4) implement strategies for increasing the number of donors to the Schools.

VIII. Building for Excellence
8. Improve the campus physical environment, including the quality and efficiency of current space, and create additional space to meet our needs.
   - Successful IU approval for Science and Engineering Laboratory Building (SELB), Phase I: New building needed to overcome the lack of adequate space for research and instructional laboratories, to replace outdated animal facilities with a new vivarium, to expand core research facilities and wet research laboratory space, and to add office space for faculty and graduate students. Construction begins in 2011; Phase II negotiations underway.

IX. The Centrality of Information
9. Continue to expand the use of information technology in learning and research.
9. Continue to expand the use of information technology in teaching and research.
   - Prof. Shaofen Fang, Chair of Computer and Information Science, recently appointed IT Director of the School of Science to lead the school's efforts and needs for teaching lab support, servers and data backup service, research support and distance education.
   - Many research labs contribute to or rely on computing resources in the School of Science, or campus and IU system for maintaining, analyzing, and retrieving data for large-scale research projects. New wiring upgrade for SL/LD underway to manage enhanced need for large-scale computing.
   - Development of state-of-the-art Comprehensive Testing Center. Through a partnership, our current Testing Center, the IUPUI Testing Center, the Office of the Registrar and UITS, we have just initiated the creation of a multipurpose testing facility in SL where students sit for computer-based exams, quizzes, or other proctored activities. When not in use for testing, these facilities can be used for general student computing.
   - Wide usage of Oncourse by faculty for course management, communication, teaching and resources.
   - New cyber Peer-Led Team Learning (PLTL) initiative, supported by new NSF TUES grant (Transforming Undergraduate Education in STEM), will bring enhanced use of and expanded options for on-line course delivery, assessment of student learning through distance education.

X. Responsible Stewardship of Indiana University’s Resources
10. Continuously improve the efficiency and effectiveness of academic and administrative processes.
   - School of Science continues to identify, review, and improve routine annual, and/or academic year processes within school and individual departments to increase efficiency and enhance services to faculty, students, and other stakeholders.
   - The continuing decline in state support and increasing administrative tax (cost allocation) have led to a near total dependence on tuition for income, which requires that the School of Science adopt a more entrepreneurial model for growth.
   - Internal to the School, a new RCM model is being developed for allocating resources to departments using transparent cost drivers with built-in incentives to encourage additional efficiency, quality improvement, and success.

11. Enhance campus diversity via the Enrollment Shaping initiative and providing support programs such as those offered in the Multicultural Success Center.
   - Continue to develop and expand current Diversity Research Programs for undergraduates, with Center for Research and Learning: Diversity Scholars Research Program (DSRP), Louis Stokes Alliances for Minority Participation (LSAMP), Ronald E. McNair Post-baccalaureate Achievement Program (McNair), Summer Diversity Scholars Research Program (SDSRP), Undergraduate Research Opportunities Program (UROP), Multidisciplinary Undergraduate Research Institute (MURI), Bridges to the Baccalaureate Program, funded by NIH, 2+2 with Ivy Tech, New NSF Undergraduate Research Mentoring in the Biological Sciences (URM) Program, New NSF Science Talent Expansion Program (STEP) grant.
   - Continue to develop Women in Science House, Women in Science Scholarship.
   - Increase diversity of the faculty in the School of Science and the proportion of School of Science women faculty at more senior ranks.

12. Increase communication about priorities and achievements with internal constituents to strengthen community and collaboration and with external stakeholders to attract funding and top talent.
   - Rebrand the School of Science: (1) Develop and implement a strategy to market the School of Science as “a school of choice” for high-ability students who seek a quality undergraduate education in science, (2) Develop periodic publications aimed at reinforcing the School of Science brand to parents of students, alumni, donors and the Indiana general public and (3) Provide strategies for improving the public presence of the school through its special events and functions.
   - New School of Science website for complete overhaul of functionality and design. The site aims to extend the reach of the School of Science and each of its departments and programs by serving a broad on-line audience of current and prospective students, faculty and staff as well as members of the general public interested in science education, innovation and outreach.
3. What longer-term trends (5-10 years) exist in your discipline/field that will affect your unit?

- The School of Science has invested heavily in areas of basic and translational research in collaboration with the basic sciences departments and the Simon Cancer Center in the IU School of Medicine, the Department of Biomedical Engineering in the School of Engineering and Technology, and other research groups on campus.
- Given the relative youth and the entrepreneurial culture of our faculty, the School of Science is in a unique position to develop innovative undergraduate and graduate academic programs that are reflective of the emerging trends in science education and research. For example:
  o Increasing emphasis on molecular biology and biochemistry in biology education and research
  o Increasing importance of computational tools in biology, forensic science, chemistry computer and network security, etc.
  o Rapid development in web-based applications, cloud computing, etc.
  o Evolution of geology into earth sciences, and expansion of environmental sciences
  o Increasing emphasis on advanced mathematical modeling and statistical methods in the life sciences
  o Rising importance of nanoscience and nanotechnology
  o Rapid advances in our understanding of the neurobiological and genetic basis of behavior and the development of approaches for the treatment of disorders, including new pharmacotherapies

4. If the University experiences further budget cuts, what existing and emerging programs/initiatives in your unit will be your highest priorities?

Science is committed to maintaining and enhancing its academic missions in teaching, research and service, even as the continuing decline in state support and increasing administrative tax (cost allocation) have led to a near total dependence on tuition for income. This requires that the School of Science adopt a more entrepreneurial model for growth. Priorities include the need to continue to further our mission, vision and goals:
1. Continue to build a strong and research active faculty, through disciplinary as well as interdisciplinary appointments, to expand research capacity and enhance productivity, especially in areas that support IUPUI’s life and health sciences mission.
2. Continuing to support faculty research productivity by strengthening research infrastructure, especially interdisciplinary aspects of core research facilities, and by enhancing research-enabling services.
3. Continuing to aggressively recruit and retain and graduate high-ability undergraduate and graduate students through outreach and student service innovations, and the creation of interdisciplinary programs.
4. Continuing to significantly increase alumni, community, and philanthropic support.
5. Positioning for Return on Investment: the priority will be to build on the School’s signature centers currently that highlight areas of research strength and serve as focal points of the research efforts of groups of faculty. To ensure that these centers will advance the research and educational agenda of the School, faculty will emphasize areas to create immediate impact and reap the greatest returns.
  o Understanding the molecular processes and genetic basis in developmental biology and behavioral neuroscience
  o Medicinal chemistry and distributed drug discovery
  o Developing new diagnostic tools and detection systems for biomedical sciences
  o Computational and mathematical modeling in systems biology
  o Discovery and validation of new treatments for diseases
  o Translating and applying the results from basic behavioral neuroscience through interventions that impact human behavior