SIGPLAN Open Meeting

June 9, 2008

SIGPLAN Officers

* Chair: Kathleen Fisher, AT&T
* Vice Chair: Chandra Krintz, UCSB
* Past Chair: Jack Davidson, Univ. Virginia
* Secretary: Eliot Moss, UMass
* Treasurer: Cristina Cifuentes, Sun Australia
* Koen DeBosschere, U Ghent. (PAC co-chair)
* Greg Morrisett, Harvard
* Steve Zdancewic, UPenn
* Ben Zorn, Microsoft (PAC co-chair, CACM NC chair)

Direct Member Benefits

* Reduced registration rates at SIGPLAN conferences
* Access to SIGPLAN materials in the ACM DL
* Subscription to SIGPLAN Notices (electronic or print)
* Annual CD with proceedings of SIGPLAN conferences/Notices
* Email newsletter with announcements of SIGPLAN events
* Eligibility for PAC grants (students, travel companions, int'l)
* Voting rights in SIGPLAN Elections
* Eligibility to serve as a SIGPLAN Officer

Community Benefits

* Conference sponsorship
  * ASPLOS, CGO, GPCE, Haskell, ICFP, ISMM, LCTES, OOPSLA, PLDI, POPL, PPDP, PPoPP, VEE, and many workshops.
* Awards
  * Lifetime Achievement, Service, Best PL Thesis, John Vlissides Award, Most Influential Paper for ICFP, OOPSLA, PLDI, and POPL
* Latex and Microsoft word templates for conference papers
* SIGPLAN Web Site
* Support for PL-related summer schools
* Support for Educators to attend SIGPLAN conferences

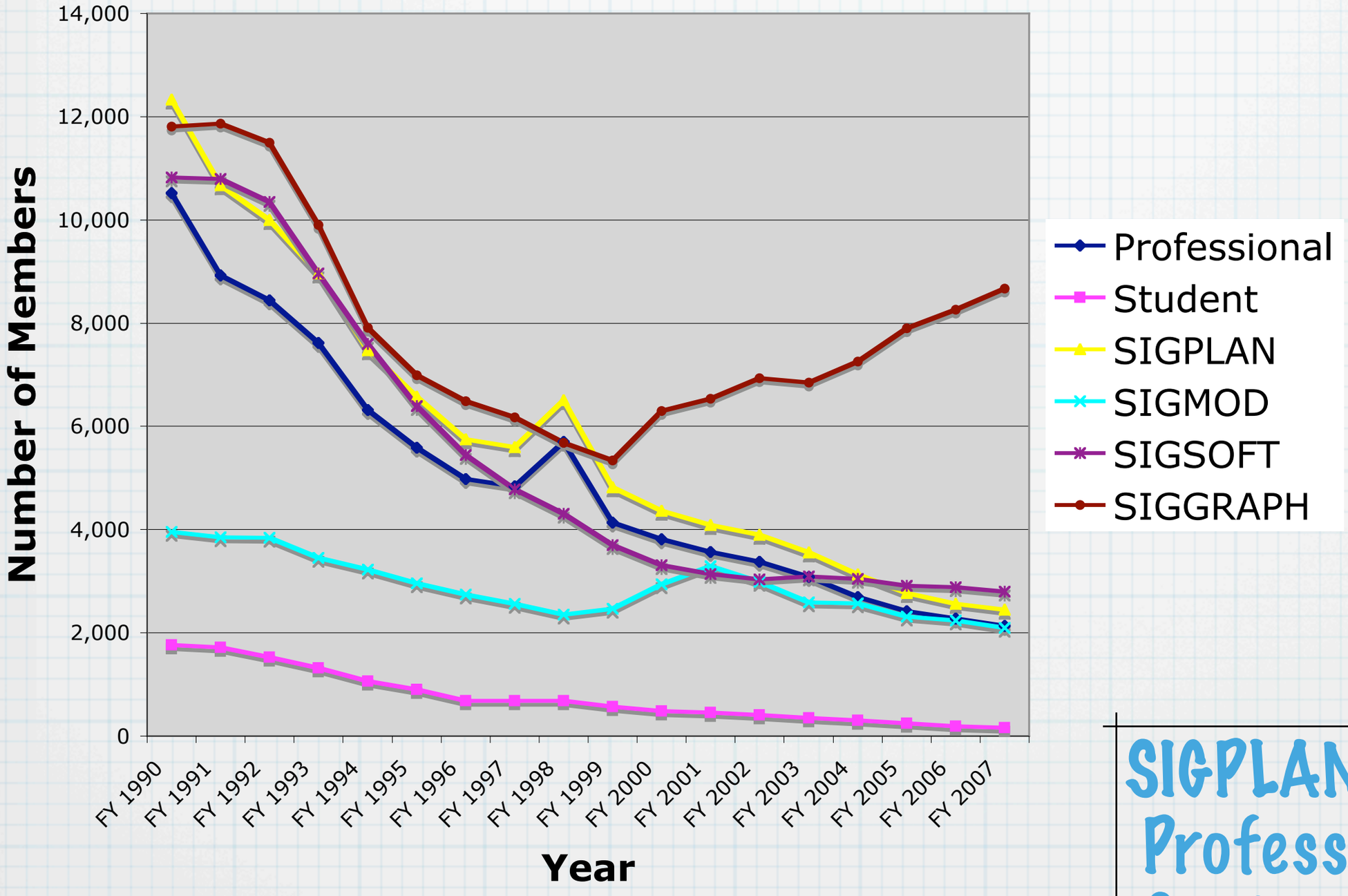
Membership Fees

Fiscal Year '07	Print	Online
Professional	$50	$25
Student	$40	$15

Fiscal Year '08	Print	Online
Professional	$65	$25
Student	$40	$15
Actual cost of direct benefits	$86	$24

Direct benefits include: newsletters, mailed proceedings, annual CD, reduced registration rates, but not awards, summer schools, PAC funding, etc.

Membership Numbers



SIGPLAN Today:

Professional: 2,135

Student: 159

Finances	Budget FY09	Projected Budget FY08	FY08 to Apr 30	Actual FY07	Budget FY07
Non-Conf. Rev.	317,906	319,479	301,723	375,485	300,205
Digital Library	94,525	106,548	106,548	101,363	96,723
Conf. Revenue	1,571,787	1,452,321	1,153,111	1,514,339	1,818,784
Total Revenue	1,889,693	1,771,800	1,454,834	1,889,824	2,118,989
Non-Conf. Exp.	522,914	521,371	305,932	441,492	433,332
Conf. Expense	1,558,906	1,413,263	1,085,156	1,292,849	1,812,418
Total Expense	2,081,820	1,934,634	1,391,088	1,734,341	2,245,750
Net	7,373	-26,834	120,350	260,915	-36,761
Fund Balance	2,328,131	2,257,147	2,300,592	2,257,147	
Required Fund Bal.	785,269	757,990	757,990	806,012	

Awards

http://www.sigplan.org/awards

* PL Achievement: **Barbara Liskov**
* Distinguished Service: **Michael Burke**
* 2006 Dissertation: **Xiangyu Zhang**

Nominations for 2009 Achievement and Service Awards due **Jan 5, 2009.**

* 2007 Dissertation: **Swarat Chaudhuri**
* Most Influential Paper from 10 years previously: ICFP, OOPSLA, PLDI, POPL
* Newly created John Vlissides Award for "Doctoral student participating in the OOPSLA Doctoral Symposium showing significant promise in applied software research"

Recent Activities

* Conference Report
* Changes to SIGPLAN Notices
* PAC Grants
* CACM Nomination Committee
* PL Curriculum Workshop

Conference Report

* Oversees organization of meetings:
  14 conferences and 19 workshops this year.
* Conference location selection
  * General and program chair selection
    * Program committee selection
    * Budget approval
    * Resource for program and general chairs
* Repository for common knowledge.
* Coordinates approval for new meetings.

Conferences/Symposia	Workshops	"In cooperation"
AADebug (SigSOFT)	CUFP	ANTLR
ASPLOS (SigARCH, SigOPS)	Erlang	AOSD
CGO (SigMICRO, IEEE)	FDPE	**ECOOP**
GPCE	FOOL/WOOD	ICSE
Haskell	Merlin	JICC
ICFP	ML	LDTA
ISMM	PASTE (SigSOFT)	MASPLAS
LCTES (SigBED)	PEPM	PADL
OOPSLA	PLAN-X	SIGAda
PLDI	PLAS	
POPL (SIGACT)	Scheme	
PPDP	Space	
PPoPP	Transact	
VEE (SIGOPS, USENIX)	WCFLP	

Conferences in bold have more than 100 participants.

Co-located meetings share color-coding.

Health of Major Conferences

* Generally, conferences are doing well.
  * Attendance holding steady; proportion of students is increasing.
  * Most meetings break even or show a profit.
* OOPSLA update.
  * Technical program very strong
  * Attendance seems to be stabilizing.
* POPL growing at fastest rate

PLDI Statistics

PLDI	Attendance	Submitted	Accepted	Location
2007	334	178	45	San Diego (FCRC)
2006	330	174	36	Ottawa
2005	293	137	28	Chicago
2004	246	127	25	Washington
2003	347	131	28	San Diego (FCRC)
2002	235	169	28	Berlin
2001	311	144	30	Snowbird

POPL Statistics

POPL	Attendance	Submitted	Accepted	Location
2008	318	212	35	San Francisco
2007	250	200	36	Nice France
2006	264	167	33	Charlestown
2005	212	172	31	Long Beach
2004	202	176	29	Venice
2003	182	126	24	New Orleans
2002	219	128	28	Portland

ICFP Statistics

ICFP	Attendance	Submitted	Accepted	Location
2007	160	119	32	Freiburg Germany
2006	300	76	24	Portland
2005	187	87	26	Estonia
2004	167	80	21	Snow Bird
2003	153	99	23	Uppsala
2002	195	76	24	Pittsburgh
2001	167	66	18	Florence

OOPSLA Statistics

OOPSLA	Attendance	Submitted	Accepted	Location
2007	1225	156	33	Montreal
2006	1178	157	27	Portland
2005	1081	142	29	San Diego
2004	1172	173	27	Vancouver
2003	948	147	26	Anaheim
2002	1601	125	25	Seattle
2001	1236	145	27	Tampa (9/11 & Anthrax)

Help for Meeting Organizers

* Program chair support
  * http://www.sigplan.org/programchairs.htm
  * Program committee formation, plagiarism policy, CFP/web site help, submission software (START), PC meeting suggestions, list of responsibilities
* General chair support
  * http://www.sigplan.org/guidelinesforthechair.htm
  * Locations, hotel contracts, ACM approval process, budget formation, publication (DL) and proceedings, list of responsibilities

Current Issues

* Author response well-received and heavily used
* Efforts to accept more papers:
  * Shortening talks (PLDI, POPL)
  * Lengthening the conference (ICFP, POPL)
* Experiments in "Double-blind" reviewing
  * Mixed experiences, much more work for Prog. Chairs
  * Significant support for it however
* Increasing support and activities for students
* TOPLAS evolution

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Changes to SIGPLAN Notices

- In January, the SIGPAN EC approved a change to the content of regular NOTICES issues.
- Previously: Notices published unsolicited manuscripts deemed relevant to the SIGPLAN community (not peer reviewed), which was appropriate in an era prior to the web.
- Notices' content has shifted so the benefit matches the cost:
  - Regular issues will be dedicated to raising the community's awareness of SIGPLAN conferences, symposia, and workshops.
  - Notices will publish
    - Abstracts of papers
    - Some supplementary material for meetings with 100% SIGPLAN sponsorship

Supplementary Content

* Examples:
  * One or two "best papers," as chosen by workshop participants
  * Selected papers chosen by the program committee
  * A blog or other commentary about the event written by a workshop participant
* To date:
  * TRANSACT 2008 (abstracts plus a selected paper)
  * PLAS 2008 (abstracts plus 2 best papers & survey by co-chairs)
  * PL Curriculum Workshop proceedings
* Notices remains a newsletter that will facilitate the dissemination of SIGPLAN events, activities, and information relevant to the SIGPLAN community.

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* PAC Grants (see separate slide deck)
* CACM Nomination Committee
* PL Curriculum Workshop

CACM Research Track Nominating Committee

Ben Zorn
June 2008

Background

- CACM Reorganized in 2007 - new format July 2008
  - Moshe Vardi, EIC
  - Focus on highlighting technical contributions
  - "Research Track" includes best papers from ACM conferences
- SIGs asked to put together a process of nominating papers for consideration by CACM Research Track board
  - February 2008: Kathleen authored SIGPLAN proposal
  - March 2008: Moshe okayed proposal, Ben agreed to chair committee

Goal & Process

- **Goal** – to submit to CACM editorial board papers from SIGPLAN conferences of appropriate quality and of broad interest to the CACM readership
- **Approach** – standing SIGPLAN committee considers candidates and nominates best
  - Candidate papers come from two sources
    - **Committee candidates**: standing committee suggesting possible papers (conferences have representatives on the committee)
    - **Community candidates**: any SIGPLAN member can propose a paper for consideration by the standing committee
  - Working on Web site for submitting both kinds of papers

Nomination Process

- Virtual meeting 3 times / year
- Consider new candidates, tabled old candidates
  - Initially some backlog due to 3-year window
- Attempt to have consensus to nominate
  - Likely all papers will be high quality
  - Attention to fit for CACM will be part of decision
- How many papers candidates/nominations?
  - Perhaps 50 papers in CACM total
  - 10% from SIGPLAN likely goal (20% tops) => 5-10 papers/year
- Conflict of interest process outlined in proposal
- Nominated papers published on SIGPLAN site

Committee Composition

- 10 people representing the various constituencies
  - Member of EC (chair) — Ben Zorn
  - SIGPLAN chair — Kathleen Fisher
  - Past SIGPLAN chair — Jack Davidson
  - POPL delegate — TBD
  - PLDI delegate — Vivek Sarkar
  - OOPSLA delegate — TBD
  - ICFP delegate — TBD
  - PPDP/GPCE/Haskell delegate — Julia Lawall
  - PPoPP/VEE/ISMM delegate — Hans Boehm
  - LCTES/ASPLOS/CGO delegate — David August
- Terms 2 years (staggered to start)

Call to Action

* Think about papers to nominate
* Talk to the conference representatives on the committee
* Think about additional candidate papers to nominate
* Web submission site available from http://sigplan.org soon

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ACM SIGPLAN
Workshop on Programming Language Curriculum
(PLC)

- Held May 29 & 30 at Harvard Thanks!!
- Lead by Kathleen Fisher and Chandra Krintz
- Motivation: Initiate discourse on the role of programming languages in the undergraduate curriculum
- Sponsored by NSF, NSA, and SIGPLAN Thanks!!
- 30 participants
  - 16 steering committee members, 13 authors of selected whitepaper contributions, NSF and ACM Ed Board representatives

Participants

Eric Allen (Sun Microsystems)
Mark Bailey (Hamilton College)
Ras Bodik (UC Berkeley)
Kim Bruce (Pomona College)
William Cook (UT Austin)
Matthias Felleisen (Northeastern Univ.)
Kathleen Fisher (AT&T Research)
Kathi Fisler (WPI)
Daniel Friedman (Indiana Univ.)
Stephen Freund (Williams College)
Sol Greenspan (NSF)
Robert Harper (CMU)
Michael Hind (IBM Research)
John Hughes (Chalmers)
Chandra Krintz (UC Santa Barbara)
Shriram Krishnamurthi (Brown)
Jim Larus (Microsoft Research)
Doug Lea (SUNY Oswego)
Gary Leavens (Univ. of Central Florida)
Greg Morrisett (Harvard Univ.)
Benjamin Pierce (Univ. of Pennsylvania)
Lori Pollock (Univ. of Delaware)
Stuart Reges (Univ. of Washington)
John Reynolds (CMU)
Martin Rinard (MIT)
Olin Shivers (Northeastern Univ.)
Peter Sestoft (ITU)
Mark Sheldon (Wellesley College)
Larry Snyder (Univ. of Washington)
Franklyn Turbak (Wellesley College)
Mitchell Wand (Northeastern Univ.)

Mission Statement

- Explosive growth in CS in general and PL in particular
  - Internet, multi-core, managed runtime systems, etc.
- Most PL curricula have not kept pace
  - Some curricula no longer include a PL course at all
  - Outdated concepts, the role/importance of PL questioned
  - ACM/IEEE curriculum only minimally covers PL concepts
- Need to consider as a community
  - **WHY** PL should be included in the CS curriculum
    - Clear articulation for non-PL academics of why every computer science undergraduate should have a solid PL knowledge base
  - **WHAT** topics and concepts should be taught
    - Broad audience, many constraints, range of career paths and goals
  - **HOW** it should be taught
    - Recommended practices for range of venues, audiences, constraints

Goals of the PLC Workshop

- Take ownership of the role of PL in our curricula
- Provide a venue to initiate discussion on the What, the Why, and the How
- Produce report to initiate community discourse, feedback, and on-going participation, containing:
  - Accepted whitepapers
  - Outcomes from workshop discussions
    - The Why
    - The What
    - And initial ideas on the How
  - To be published in SIGPLAN Notices November'08 issue
  - To be made available for community contribution
    - On the SIGPLAN webpage in September 2008

Scope

- The focus of the workshop was on undergraduate PL curriculum.
- Given the limited time frame, we did not consider curricular questions concerning compilers, software engineering, and other related fields except as they directly relate to PL curriculum.
- Workshop participants felt these other areas should be considered as well in the future.

The WHY: Students

- Address misconceptions & explore benefits of studying PL
- Misconceptions
  - Programming languages are boring
  - Learning one language is all I need
  - I can program in a language, so I know all I need to about PL
  - I only care about one domain
  - Imperative and object-oriented languages are the best/only models
- Benefits
  - How to use hot languages without getting burned (avoid pitfalls)
  - More productive problem recognition, conception, and solutions
  - Make your own language: DSLs as a way of structuring code.
  - Job satisfaction and efficacy in the LONG term
    - Make efficient use of whatever comes next
    - Future languages will be built out of intellectual building blocks

The WHY: Faculty

- Misconceptions
  - I never took PL and never needed it
  - Computing advances all come from new algorithms and Moore's law
  - PL is irrelevant: popular languages not designed by PL people
  - No general principles; no intellectual depth
  - Having multiple languages is bad -- we need one unifying one
- Benefits
  - Many foundational concepts can be covered in a PL course
    - Central to computer science and to core reasoning skills
  - Worldwide challenge: parallel and concurrent execution
  - High impact: Web 2.0, map/reduce, code analysis
  - Avoid software errors, security holes, performance bottlenecks
  - Provides new ways to reason about problems/identify solutions
  - Over career, students will use many different languages
    - Multiple languages commonly used in a single system

The WHAT (All Undergrads)

All undergraduates should be able ANALYZE and APPLY

- Naming (binding, scope)
- Control (recursion, iteration, dyn. dispatch, exceptions, continuations)
- Static/dynamic semantics
  - Simple type systems, parametric polymorphism
  - Grammars (RE, CFG)
  - Static and dynamic typing
  - Invariants (loop, data structure)
- Modularity and abstraction
  - Procedures
  - Compositionality, information hiding, classes
- Objects, state, mutation
- Higher-order functions, functional programming, immutability
- Runtime implementation (stacks, tail call, memory, GC)
  - Simple cost models (time/space complexity)
- Concurrency, parallelism
- Symbolic computation (programs as data)

The WHAT (PL Class)

- **UNDERSTAND, ANALYZE, and APPLY core concepts in PL**
  - Finite/infinite data structures, functions, control, concurrency, parallelism, state, modularity/interfaces, naming, cost models, laziness, monads
  - Models of computation
    - lambda calculus, FSAs, PDAs, relational calculus, Actors
  - Static and dynamic semantics
    - concrete/abstract syntax, type systems, transition systems, specifications

- **Know how to SYNTHESIZE into languages…**
  - OO, functional, logic/constraint programming, DSLs
- **And their USE in systems…**
  - Unix pipes, plan 9, TeX, nonces, modeling business process, network protocols, OS schedulers, map/reduce, grep, web services, algorithmic analysis, tools to check systems
- **Know how to IMPLEMENT these concepts…**
  - interpreter, type checker, parser, translator, analysis tools

The HOW

- Some ideas for reaching every student:
  - Improve PL content in CS1/CS2 intro courses
  - Add CS3: "Advanced Programming Techniques"
  - Integrate PL topics with other courses:
    Web Services (continuations, multiple languages), SE (modularity, specs), Computation (FSA, PDA, lambda), Language implementation (vms, compilers, interpreters), Systems (concurrency, naming, transactions)
- Offer exciting PL Elective course.

The HOW: Improving CS1/CS2

Proposed "revenue neutral" change to required hours in the Computing Curriculum 2001 core:

http://www.sigcse.org/cc2001/cs-overview-bok.html#BOKTable

Affected Knowledge Units (of 59 in PF/PL)	Current	Proposed
PF4 Recursion	5	2
PF5 Event-driven programming	4	2
PL1 Overview of PL	2	0
PL2 Virtual Machines	1	0
PL3 Language Translation	2	0
PL6 Object-oriented programming	10	10
PL7 Functional Programming	0	10
Total Number of Hours	24	24

Strategies

- Develop clear and convincing WHY materials.
- Develop and document PL community consensus on WHAT/HOW
- Work to influence the ACM/IEEE curriculum
- Constitute a SIGPLAN Education board

- Members interact with ACM/IEEE Ed boards
- Solicit community white papers on what/why/how
- Monitor and moderate improvements to the PLC report on web
- Highlight good curricula, course materials, and textbooks.

Call for Feedback & Participation

- Important, high-impact effort
  - Will not be successful without broad community involvement
- How to get involved
  - Give us your feedback here
  - Attend BOF session at major SIGPLAN conferences
  - Provide feedback via the SIGPLAN PLC webpage
    - Report will be posted in September
  - Inform and involve others
  - Contribute to SIGPLAN Educational Board (forming soon)
  - Organize WPLC in '09 and beyond
  - **Contact Kathleen or Chandra** with feedback or to volunteer **{chair_sigplan,vc_sigplan}@acm.org**

Back

Comments?
Questions?
Concerns?