

# NISS

NISS Affiliates  
NISS/SAMSI University Affiliates  
Planning Meeting  
March 5, 2004

## Agenda

9:05	Program Review and Plans: Alan Karr, Thomas Gerig, Gary McDonald, Stanley Young
10:00	SAMSI Programs and Plans: James Berger
10:45	2 + $\epsilon$ Minute Madness
12:00	Lunch
1:00	NSF Initiatives: Roger Berger
1:45	NISS Strategic Vision: Alan Karr
2:45	Open Discussion
3:30	Adjourn

## Major Developments at NISS

- NISS Strategic Vision
- Associate Director Search
- Affiliates Problem Day
- EURANDOM “Concordat”
- Changes in BoT leadership: effective 7/1/04
  - Chair = Vijay Nair (Michigan)
  - Vice-Chair = Lee Wilkinson (SPSS)

## Other Developments at NISS

- Bioinformatics Research
  - HDF
  - CIIT
- Other research initiatives
  - NIAAA proposal
  - SDL for geospatial image data
  - DQRI
- Sacks Award for Cross-Disciplinary Research
  - 2003: Raymond Carroll (Texas A&M)
  - 2004: Nominations due in May

## Membership Summary -1

- **Corporations:** Amgen, General Motors, GlaxoSmithKline, IcaGen, Merck & Company, MetaMetrics, Pfizer, Quintiles Transnational, Research Triangle Institute, SAS Institute, SPSS, Telcordia Technologies
- **Federal Agencies:** Bureau of Labor Statistics, Census Bureau, Environmental Protection Agency, National Agricultural Statistics Service, National Center for Education Statistics, National Center for Health Statistics, National Institute of Standards and Technology, National Security Agency
- **National Labs:** Los Alamos National Laboratory, Pacific Northwest National Laboratory

## Membership Summary - 2

- **Universities:** American (Mathematics and Statistics), Carnegie Mellon (Statistics), Duke (Mathematics; Institute of Statistics and Decision Sciences), Emory (Biostatistics), Florida State (Statistics), Georgia (Statistics), Iowa (Statistics), Iowa State (Statistics), Johns Hopkins (Mathematical Sciences), Maryland (Mathematics), Maryland Baltimore County (Mathematics and Statistics), Michigan (Statistics + Biostatistics), Minnesota (Biostatistics), Missouri-Columbia (Statistics), North Carolina State (Mathematics; Statistics), North Carolina at Chapel Hill (Biostatistics; Mathematics; Statistics & Operations Research), Oakland (Mathematics and Statistics), Ohio State (Statistics), Pennsylvania State (Statistics), Southern Methodist (Statistical Sciences), Stanford (Statistics), Texas A&M (Statistics), *UCLA* (Statistics + Statistical Consulting Center)

## Major Program Components

- Information Dissemination
- Research
  - Catalysis
  - Funded projects
- SAMSI
- Human Resources
- Networking

## Affiliates Activities—1

- Information Dissemination
  - Technology Days
    - 2002-03: High Throughput Screening, Proteomics, Internet Tomography
    - 2003-04: Data Confidentiality
    - 2004-05: Pharmacogenomics (10/04), ...
  - Workshops
    - Dates TBD: Overarching Issues in Risk Analysis
  - Short Courses
    - 4/30/04: Validation of Mathematical Models and Computer Simulation for Product Development
- Human Resources
  - Job Listings (AJL)
  - Federal agency postdocs

## Affiliates Activities—2

- Formation of Research Relationships
  - Annual Problem Day
  - Proposal Development Fund
- Networking
  - March Planning Meeting
  - JSM Lunch
- Others
  - Affiliates Reimbursement Accounts
  - Publicity
  - Co-sponsored events
    - EURANDOM workshops
    - QPRC, MMR, ...

## Affiliates Activities—3

- SAMSJ
  - Events
    - 4/1-2/04: Hot Topics Workshop on Workshop on Mathematical Sciences Research to Meet National Security Needs
    - 5/17-18/04: DMML Closing Workshop
  - Program Participation
  - Input to SAMSJ leadership

## APDF

- 2003: Two awards
  - CMU/TAMU: Getting Something from Nothing - Assessing Information Gain from Lack of Information Due to Cell Suppression
  - Rutgers/Avaya/UNC: Validation of Network Tomography
- 2004: Two awards planned
  - Proposals due June 1, 2004
  - Awards announced at NISS/SAMSJ JSM 2004 Reception

## Details

- Proposals should be cross-disciplinary, bold and of sufficient scale to achieve significant impact
- Awards cover expenses other than PI time associated with preparation of cross-disciplinary, preferably multi-institution, proposals
  - PI on the proposal to the APDF must be a statistical scientist associated with a NISS Affiliate or NISS/SAMSJ University Affiliate
  - Home institutions of the PI and co-PIs must provide (in-kind, typically) matching equal at least equal to funds requested from the APDF

## Selection Criteria

- Scientific strength, including the importance of the problems addressed and the potential impact of the research
- Genuine cross-disciplinarity, including active participation of co-PIs from the applied mathematical sciences or other scientific disciplines
- Time commitment of the PI and co-PIs
- The extent to which APDF support would make something happen that would not happen otherwise
- Preference to proposals that
  - Involve young researchers, particularly postdoctorals
  - Involve multiple institutions, especially Affiliates
  - Intersect NISS' own research programs

## Potential Initiatives

- Annual Affiliates Survey
  - Follow-up to March Planning Meeting
- Events at Affiliates' Sites
  - Model Validation Short Course: Oakland University
  - Risk Analysis Workshop: Iowa State University
- Quarterly updates on NISS research
- Affiliate contact with postdocs
- Others???

## NISS and SAMSI Postdocs

John Aston	McGill/London	Census	UK
Max Buot	UVa	Record linkage	CMU
Jun Feng	UNC	HDF	???
Shanti Gomatam	USF (FSU)	Data swapping	FDA
Amy Grady	UNC	GCC	???
Murali Haran	UMn	Web data LWI	Penn State
Xiaodong Lin	Purdue	NISS: DC SAMSI: DMML	Cincinnati
Jack Liu	NCSU	CIIT	???

## NISS and SAMSI Postdocs

Rui Paulo	Duke	SAMSI: StoCom NISS: FRG, GM MV	Bristol
Danny Walsh	Penn State (UWa)	FRG, GM MV	NZ
Ernest Fokuoe	OSU (Glasgow)	DMML	OSU
Emily Lada	NCSU	SAMSI: MULTI CRSC	???
Cheolwoo Park	Seoul National	INT	???
David Rolls	UNC-W (Queen's)	INT	UNC-W

## NISS and SAMSI Postdocs

Jonathon Bardsley	Montana State	INV	U Montana
Beatrix Jones	Penn State (UWa)	StoCom	Masey (NZ)
Yanyuan Ma	MIT	SAMSI: INV CRSC	???
Ji Yu	Duke	SAMSI: ENV UNC: Math	???

# NISS

## Strategic Vision

## Overall Vision

- NISS is a truly national institute that serves the statistical sciences community by
  - Performing and stimulating high-impact research at critical interfaces between statistics and disciplinary science, as well as between industry/government and academia
  - Supporting career development at all levels, with special emphasis on postdoctorals
  - Engaging the national community in a variety of activities, especially but not exclusively by means of its Affiliates Programs and SAMSI

## Research Vision

- NISS research
  - Is targeted at interfaces
    - Between the statistical sciences and disciplinary sciences
    - Between industry/government and academia
  - Responds to national needs as well as issues raised by Affiliates
  - Is a mixture of long-term involvement and shorter-term explorations subsequently taken up by others
  - Is of the highest quality and impartiality
  - Leverages NISS' partnership with SAMSI to increase community participation and impact

## Research Vision: Sub-Themes

- Three principal kinds of projects
  - Cross-disciplinary bridge building (the “traditional” NISS mission), driven by scientific needs and funded principally by disciplines other than statistics
  - Research addressing industry/government-academia interfaces, such as data confidentiality and data quality
  - Problems brought to NISS, either in relatively inchoate form (for example, data quality in 2000) or relatively specific form (for example, the 2004 NCES dropout task force)

## Research Vision: Sub-Themes—2

- Research becomes more diverse in terms of
  - Scientific scope
  - Institutional “homes” of PI’s and other participants
  - Geography
- Current strengths are maintained
  - Adaptability, flexibility, responsiveness
  - Ability and willingness to assume risks
  - Ability to devote resources to project and proposal development
  - Ability to assemble the “best” teams, drawn from the entire community

## Human Resources Vision

- Through its research projects and other activities, NISS offers unique career development opportunities for statistical scientists at all levels:
  - Project formation and participation
  - Postdoctoral fellowships
  - Visiting appointments, some jointly with SAMSI
  - Educational activities such as Affiliates Technology Days and SAMSI workshops

## Human Resources Vision: Sub-Themes

- Postdoctoral program remains the “centerpiece”
- Increased project opportunities for
  - Senior researchers, especially to propose and lead NISS projects
  - Graduate students
- Extensive activities, centered on but broader than the Affiliates Program, for those other than project participants
- Continuing contact with participants, including
  - NISS Alumni Association

## Community Engagement Vision

- NISS becomes part of the infrastructure of the discipline by fulfilling essential, unique roles
- NISS attracts, engages and serves community through a multiplicity of relationships, with
  - Affiliates
  - National professional organizations, including the parent societies of NISS
  - Research institutes in the US and abroad
  - All organizations and individuals supportive of the NISS Strategic Vision

## Community Engagement Vision: Sub-Themes

- Multiple communication channels make clear to the community such items as
  - The extent and depth of past and current community engagement in NISS, via research, SAMSI and governance
  - How NISS selects scientific areas and project participants
  - The support of the Board of Trustees, on behalf of the community, for NISS
- NISS balances national engagement with its Research Triangle Park base

## Community Engagement Vision: Sub-Themes—2

- NISS is a broad forum for identification of research needs and formation of collaborations to address them, by means of such mechanisms as
  - Spin-offs from NISS projects
  - Affiliates Problem Days
  - Affiliates Proposal Development Fund
  - SAMSI and research institutes
- NISS-sponsored and co-sponsored events are held at sites spanning the geographical and scientific engagement of and with NISS

## Community Engagement Vision: Sub-Themes—3

- The Affiliates Programs
  - Deliver clear, agreed-on value to corporate, government, national laboratory and university affiliates over both the short and the long run
  - Shape and support the research programs of NISS
  - Help NISS build bridges to other disciplines
  - Function in a way that does not lead to a feeling of exclusion by non-Affiliates

## Scale Vision

- In order to realize the research, human resources and community engagement components of the Strategic Vision, NISS grows to approximately twice its current size, in essentially all dimensions:
  - Scientific leadership
  - Research activity, measured by projects or dollars
  - Project participants, especially postdoctorals and senior researchers from organizations other than NISS
  - Personnel, including a small “permanent” scientific staff
  - Facilities

# NISS

## Operational Goals 2003-2008

## Summary

- Double the scale of NISS in almost every dimension
  - Leadership
  - Science
  - Affiliates
  - Outreach
  - Personnel
  - Facilities
- More than double “external” participation in NISS activities

## Science

- Increase direct research expenditures from \$1.2 M (FY 2004) to \$2.5M (FY2008)
- Research program structure
  - Both cross-disciplinary and industry—academia bridge building
  - 2 major thrusts (at least one of which is long-term)
  - 4 secondary thrusts
  - PIs on at least 30% of research not from NISS leadership
  - 50% of research brought to NISS by Affiliates or others
- Relationship to SAMSI
  - 1+ SAMSI program every 2 years that arises from and reflecting NISS and Affiliates’ interests and engagement
  - At least 2 secondary thrusts linked closely to SAMSI programs

## Personnel

- Director (full-time)
  - Responsibilities: everything, including fund-raising and community relations
- Associate Director (full-time)
  - Responsibilities: research generation, interaction with SAMSI, postdocs
- 1-3 Assistant Directors (part-time?)
  - Responsibilities: Affiliates, research
  - 2-4 Scientific staff (full time; quasi-permanent)
  - Responsibilities: lead and generate research
- 12 Postdoctorals, 4 shared with other organizations
- 2+ Senior scientific visitors/year
- 5 Support staff: administrative support, finance, affiliates, communication, computing

## Affiliates

- Program structure
  - 20 Corporate, with 3-4 “clusters” defined by shared interests
  - 12 Federal agency and national laboratory
  - 50 University departments
- Principal activities
  - 8 Technology Days per year, some at Affiliates’ sites
  - 4 APDF awards per year
  - Strong “match-making” role for NISS, for example via Affiliates Problem Days
  - Technology transfer of SAMSI research to Affiliates
  - Affiliates services (e.g., publicity)

## Outreach

- Hierarchy of services, in part through SAMSI, targeting multiple organizations
  - Affiliates
  - Society parents
  - Supportive organizations that are not Affiliates
- Cooperative scientific ventures (e.g., shared postdocs)
- Array of communication mechanisms
  - Affiliates events
  - JSM activities
  - Newsletters, web site
- Effective but selective presence across the country

## Facilities

- Expanded Research Triangle Park headquarters building comprising

Item	Square Feet
Offices	12,000
Meeting rooms, including auditorium	10,000
Support services	6,000
Total	28,000

(This represents a 12,000 square foot addition to the current 16,000 square foot building.)

## Priorities

- 2003-04
  - Hire Associate Director
  - Initiate planning for facilities expansion
- 2004-05: Year of the Affiliates
  - Articulate measures by which NISS and Affiliates will judge the value they derive from the Programs
  - Grow program to  
(Corp, Fed/NatLab, Univ) = (20, 12, 50)
  - Expansion of research driven by affiliates

## Priorities—2

- 2005-07: Focus on Outreach
  - Develop model that allows NISS simultaneously to build on its Research Triangle Park base and identity, but still penetrate deeply the entire community
  - Expand the research program by identifying opportunities and mechanisms to engage the community and broaden the base of collaborators and PIs
  - Create “quasi-endowment” to support long-term visitors
- 2007-08: Facilities
  - Open new facilities