

Education:
**Connecting Forensics & Mathematical
Sciences**

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Outline

- Motivation
- Audience for Educational Component
- Suggestions
 - “Cluster” Activities
 - Curriculum Development
 - Internship/Articulation Programs
- Open Discussion

Motivation

- “Education and Outreach” programs part of SAMSI Vision Statement
 - Sponsors activities at undergraduate & graduate level
- Consistent with “broader impact” requirements of publicly funded programs
- Introduce “early career” participants to research careers in forensic science
- Institutes have history of educational outreach
- No education working group – educational discussion within existing working groups

Audience for Educational Component

- “General” Public
 - “Community” outreach about role statistics & mathematical sciences
- Field Practitioners
 - Some discussion already during workshop
- “Next Generation” of researchers and practitioners (Early Career)
 - How best to invite next generation?
 - How to introduce the next generation to best practices?

“Cluster” Activities Suggestions

- More tutorial/“advanced study” workshops that prepare “early” career participants
 - Similar to the one preceding this workshop
 - Alternative model – tutorials “embedded” within workshop
- Post-workshop activities – research groups, conference sessions, etc.
- Within WS itself
 - Poster/graduate student talk sessions
 - Sessions focusing on educational issues associated with WS topic

Curriculum Development

- Most Liberal Arts & mid-size institutions do not have Statistics Departments/Programs
- Working within Mathematics Departments
- Perhaps a minor in Statistics; usually with few options
- Institutions have limited resources; creating new courses means a tradeoff
- Materials already exist; Advantageous to develop materials directly related to program

Connect Math Sciences with Forensic Disciplines

- Develop “multidisciplinary” courses related to forensics?
- Inject forensics topics into existing curricula?
- Emphasize forensic applications in existing curricula?
- Would forensic emphasis increase retention in STEM fields?
- Partner with organizations experienced in curriculum development - COMAP

Modules & Other Materials

- “One-day” independent modules “dropped” into course?
 - In-class time is limited
 - Resource- & time-intensive to develop
 - Uniform template would be required
 - Instructor materials should accompany modules
- Exercises/activities that supplement course exercises?
 - Instructions on which courses are best
 - Suggestions on where best to inject in course

Contributing a Module: Outline

- Sections
 - Title
 - Author(s)
 - Module Summary
 - Informal Description
 - Target Audience
 - Prerequisites
 - Mathematical Fields
 - Application Areas
 - Goals and Objectives
 - Technology/Software Needs
 - Module
- Be sure to get permission for pictures, diagrams, etc.

Research Experiences for Undergraduates (REU)

- 8-10 week programs introducing UG to research topics
- REU excellent recruitment tool
- Forensics can be intriguing topic for students
- Several forensics sites already exist – URI
- Some questions:
 - Are the topics of this WS “doable” in 8-10 weeks?
i.e. Is it possible to make noticeable progress?
 - Best locations? Centers? Departments? Joint sites?

Other Suggestions

- Articulation agreements between institutions and labs
 - Internships for students
 - Shared resources/faculty professional development
- Resources website with program
 - Links to existing resources, activities, programs
 - Guidelines on developing/submitting materials
 - Wikipage to share ideas

Open Discussion

- Other Ideas/suggestions
- Integrate some educational discussion within working group discussions
- What “educational” elements lend themselves to your topic?
- What is reasonable? feasible? practical?
 - e.g. Modules more up front (planning, editing, etc.), but stand alone after completion
 - Website less up front, but requires maintenance, up dating