Project Data Management and Reporting.

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NSF FORM 1295: PROJECT DATA FORM

The instructions and codes to be used in completing this form are provided in Appendix II.

1. **Program-track** to which the Proposal is submitted: ___________
2. Name of **Principal Investigator/Project Director** (as shown on the Cover Sheet):

   ____________________________________________

3. Name of submitting **Institution** (as shown on Cover Sheet):

   ____________________________________________

4. **Other Institutions** involved in the project’s operation:

   ____________________________________________

   **ATE only**
   Preliminary Proposal Number(s) that led to this proposal: ______________
Project Data Form

Project Data:
A. Major Discipline Code: __ __
B. Academic Focus Level of Project: __ __
C. Highest Degree Code: __ __
D. Category Code: __ __
E. Business/Industry Participation Code: __ __
F. Audience Code: __ __ __ __
G. Institution Code: __ __ __ __
H. Strategic Area Code: __ __ __
I. Project Features: __ __ __ __ __
Estimated number in each of the following categories to be directly affected by the activities of the project during its operation:

J. Undergraduate Students: ______
K. Pre-college Students: ______
L. College Faculty: ______
M. Pre-college Teachers: ______
N. Graduate Students: ______
Project Data Form

**Project Summary:**
On a separate sheet of paper provide a summary of the proposed work. The *Project Summary* should be a concise description of the project. It is limited to 22 single-spaced lines of standard-sized 12 point font. See the instructions in Subsection 3 under Formal Proposal Preparation in *Preparation and Submission of Preliminary and Formal Proposals* on page 25.
NSF Form 1295 (11/97)

- Overview
- Intellectual Merit
  - What will we learn?
  - How will it advance knowledge?
- Broader Impacts
  - What will the impact be on society?
  - How will it make the nation a better place?
Data Management Plan

- Roles and responsibilities
- Expected data
- Data formats and metadata
- Data Sharing, Access and Rights
- Data Archiving and Preservation
Roles and responsibilities

The DMP should clearly articulate how “sharing of primary data” is to be implemented.

▶ Rights and obligations, roles and responsibilities in the management and retention of research data.

▶ Changes to roles and responsibilities in case an investigator or co-PI leave the institution (costs should be explained)
Expected data

Should describe the types of materials to be produced in the course of the project

- Data, samples, physical collections, software, curriculum materials, and other.
- General description of the content, including anticipated size and volume of data.
Data formats and metadata

Should describe the specific data formats, media, and dissemination approaches that will be used to make data available to others

*Data*

- Potential users of the data are and their needs
- Standards used (open and published standards)
- Software packages planned to use

*Metadata* (Enable others to discover your data)

- The who, what, when, where, why and how of the produced data
- Standards used
Data Sharing, Access & Rights

Should describe the used dissemination approaches, as well as policies for public access and sharing

- Appropriate protection of privacy, confidentiality, security, intellectual property, or other rights or requirements
- How data are to be shared and managed
- Publication delay policies (if applicable)

Data sharing and Access

- How and when your data will be made available
- Norms for data sharing

Rights and Conditions for Re-Use

- Legal issues surrounding the sharing of research data
- Potential conditions on the use of the data
Data Archiving and Preservation

Should describe the long-term data archiving, storage solutions (distinct from short-term backup and disaster recovery strategies).

Period of Data Retention
- Data archived period after the conclusion of the award
- Publication delay policies (if applicable)

Data sharing and Access
- How and when your data will be made available
- Norms for data sharing
Archiving and Preservation Strategy

- Physical, cyber resources and facilities that will be used
- Security measures when storing and distributing the data
- Data preparation, description, or cleaning procedures
Twenty Two Years of MTBI Results - 1996-2017

- Over 478 undergrad (402 US; 277 URM)- about 30% attended multiple times- 182+ Grad students mentored
- 278/402 (U.S.) have enrolled in professional or graduate school; 190 URM
- Over 200 technical reports produced; many published in referred articles
- 141 PhDs earned; 112 US - 101 US-URMs; most over the past 11 years
- 70 Females: 30 Latinas; 8 African American; 14 White non-URM; 15 Foreign; (70 Males): 37 Latinos; 8 African American; 1 NA; 10 White and 14 foreign.
Twenty Years of MTBI Results

Where did they get their PhDs?
Cornell 20 - 17 URMs since 2003
Iowa 10 PhDs since 2005 including 7 URMs
ASU 47 PhDs since 2006 including 30 URMs
AMLSS PhD program @ ASU established in 2008- 34 PhDs and 23 URMs
How have the results been disseminated to communities of interest?

- Academic Conferences
  - Joint Math Meetings
  - SACNAS

- Online platforms

- Publications
  - Peer reviewed
  - Technical reports
Research: Students’ Agenda … a few examples

► Am I too fat? Bulimia as an epidemic
  **First paper ever on the dynamics of bulimia**

► Effects of education, vaccination and treatment on HIV transmission in homosexuals with genetic heterogeneity

► Community Resilience in Collaborative Learning
  *Crisosto, M. N., C., Kribs-Zaleta, C Castillo-Chavez and S Wirkus,
  Discrete and Continuous Dynamical Systems B,
  Volume 14, No 1, pages 17-40, July 2010.*
MTBI Inagural Class

MTBI 1996

Erika Camacho
MTBI Example: Ecstasy

Melissa Castillo-Garsow
Marcin Mejran
Karen Rios-Soto
Leilani Henson

Question:
How can we stop the spread of Ecstasy?
Ebola–Gerardo Chowell

sixth published or accepted paper in two years

Congo 1995

Uganda 2000

Number of new cases

Time of onset (days)

Mar 6
Jul 12

Aug 20
Jan 07
Model results and simple estimates suggest that local outbreaks may follow similar patterns. Furthermore, the use of relatively extreme isolation measures in conjunction with rapid diagnosis has strong impact on the local dynamics (Toronto’s situation). However, if SARS has shown us anything it is that “undetected” and “unchecked” local disease dynamics can rapidly become a global issue.
The Mathematical and Theoretical Biology Institute

MTBI

1996 – 2002 : Cornell University
MTBI: Collaborative Learning Model

- Common Language: Includes intense academic component (4 weeks)
- Relevance: Scientific Agenda driven by students questions
- Absence of Hierarchies–faculty and students are collaborators
- Collaborative Learning Philosophy that promotes leadership
- Students come from primarily non-selective institutions
- Stress a product (paper) that is tied in to the students scientific agenda
MTBI: Collaborative Learning Model

- Continuous participation as participants or mentors
- Membership on a community that stays close “forever”
- Preparation for and support while in graduate school
- Ran like an NSF institute-committed faculty-Typically from other institutions
- Accountability-via number of advanced degrees, MS and Ph.D.s
- AGEP, LSAMP, VIGRE, IGERT, AGEP, LSAMP, NSA, Sloan
Cooperative Learning: MTBI Model

Question:
Can cooperative learning build resilient communities of learners?

Nicolas Crisosto
What is Cooperative Learning?

“Cooperative learning is a set of instructional strategies which bring students of all performance levels together to work in small, mixed-ability learning groups...for problem solving experiences.”

“The students in these groups are not only responsible for learning the material being taught in class, but also for helping their group members learn the material. ” (Noorword, 1995)
Selected References on MTBI


Questions?