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Solicitation		
Forensic DNA Research & Development		

Notice:

You *must* submit your application using the Office of Justice Programs' automated Grants Management System. Paper applications will not be accepted. We suggest you begin the process as soon as possible. To start the process, go to <http://www.ojp.usdoj.gov/fundopps.htm>.

Deadline:

**9 p.m. eastern time
January 22, 2004**

*(Former deadline was
January 20, 2004)*

SL 000636

U.S. Department of Justice
Office of Justice Programs
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Washington, DC 20531

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Office of Justice Programs
National Institute of Justice
<http://www.ojp.usdoj.gov/nij>

Forensic DNA Research & Development

I. Introduction

The National Institute of Justice (NIJ) is the research, development, and evaluation agency of the U.S. Department of Justice and a component of the Office of Justice Programs. The Institute provides objective, independent, evidence-based knowledge and tools to enhance the administration of justice and public safety. The Institute solicits proposals to inform its search for the knowledge and tools to guide policy and practice.

With this solicitation, NIJ seeks proposals for research and development to enhance the forensic uses of DNA technology. The solicitation focuses on—

1. Technologies that result in faster, more robust, less costly, or less labor-intensive identification, collection, preservation, or analysis of DNA evidence. (**NOTE: Special consideration will be given to the development of miniaturized or portable forensic DNA testing devices.**)
2. Characterization of genetic marker systems that reveal additional information about a DNA contributor.
3. Technologies to increase the successful analysis of compromised biological evidence.
4. Exploration of nonhuman DNA markers with the potential to provide information about a crime.

Due date: The due date is listed on the cover of this announcement and on the NIJ Web site at <http://www.ojp.usdoj.gov/nij/funding.htm>. Extensions to the deadline are generally not granted.

Page limit: The program narrative section of your proposal must not exceed 30 double-spaced pages in 12-point font with 1-inch margins. Tables, charts, figures, appendixes, and government forms do not count toward the 30-page limit.

Reasons for rejection: NIJ may reject applications that are incomplete, do not respond to the scope of the solicitation, do not comply with format requirements, or are submitted after the deadline. No additions to the original submission are allowed.

How to submit proposals to NIJ: Complete details about how to apply for funding are in “NIJ Guidelines for Submitting Applications,” available on the NIJ Web site at <http://www.ojp.usdoj.gov/nij/funding.htm>.

II. Proposal Topics

Forensic DNA analysis has played a crucial role in the investigation and resolution of thousands of violent crimes since the late 1980s. Currently, short tandem repeats (STRs) are the most widely used markers for forensic DNA testing. Because of their high differentiating power, good resolution of alleles, and the ability to process samples rapidly using multiplexed polymerase chain reaction (PCR), 13 STRs have been chosen as the core loci upon which the FBI’s National DNA Index System (NDIS) of convicted offenders has been built.

In recent years, other genetic polymorphisms, such as those found in the mitochondrial DNA (mtDNA) genome and the Y chromosome, have been shown to provide effective results that can augment traditional STR data. MtDNA analysis is especially useful for cases involving extremely degraded or limited biological residues, such as skeletal remains or shed hairs. Y-chromosome markers can be beneficial in resolving sexual assault cases, particularly those involving multiple males. Single nucleotide polymorphisms, now known to be abundant throughout the nuclear genome, may become important genetic markers for the forensic scientist in the future. An increased understanding of the genetic properties of these systems, as well as the continued development of methods for detection, will increase their value as forensic tools.

The demand for tools and technologies in all areas of forensic science, including DNA testing, far exceeds the current capabilities of the field. The criminal justice system would greatly benefit from technical tools and innovations that can be appropriately validated, subjected to quality-control and quality-assurance procedures, and implemented for forensic use.

Applicants to this solicitation must demonstrate an appreciation of and general familiarity with the current use of forensic DNA testing. They should have an understanding of issues such as chain of custody, courtroom admissibility, degraded or limited DNA, and mixtures of DNA from multiple tissues or individuals. These issues have a significant impact on forensic DNA analysis but are not typically encountered in similar disciplines, such as molecular diagnostics.

Applicants should also demonstrate an appreciation of the costs to implement and maintain the proposed technology, as well as the training that will be required. NIJ *strongly* encourages researchers to seek guidance from or partner with appropriate State or local crime laboratories. Such associations foster a greater understanding of the issues unique to the field of forensic DNA and may strengthen the scope of the proposed research plan.

Suggested Areas of Research

- A.** Tools and technologies that will allow faster, more reliable, more robust, less costly, or less labor-intensive identification, collection, preservation, or analysis of DNA evidence and/or interpretation of DNA results.

These tools can include but are not limited to—

- Improved methods to locate and/or identify probative DNA evidence at crime scenes.
- Improved methods to collect and/or transport DNA evidence from crime scenes.
- Improved methods for detection of sperm in sexual assault evidence.
- Improved methods for separation of sperm and epithelial cells in sexual assault evidence.
- Improved methods for separation of mixtures from two or more contributors.
- Non-PCR-based methods with the capability to detect forensic DNA markers.
- Integrated methods that combine various portions of the DNA testing process.
- Methods requiring decreased operator input.
- Expert systems.

NOTE: *Proposals to develop miniaturized or portable tools for forensic DNA testing will be given priority.*

- B.** Identification and/or characterization of genetic marker systems that have the potential to reveal additional or more powerful information about the source of the biological evidence.
- C.** Tools or technologies that can increase the success rate of the analysis of aged, degraded, limited, or otherwise compromised biological evidence.
- D.** Exploration of *relevant* nonhuman (e.g., plant, animal, insect, bacterial) DNA markers with the potential to provide information about a victim or suspect and/or the circumstances surrounding a violent criminal offense (e.g., determination of post-mortem interval using appropriate entomological evidence; trace plant residues found at a crime scene or on a victim or suspect).

III. General Requirements and Guidance

This section describes the main requirements for submitting your proposal. Complete instructions are in “NIJ Guidelines for Submitting Applications,” available on the NIJ Web site at <http://www.ojp.usdoj.gov/nij/funding.htm>.

- A. Submit applications online:** Paper applications are not accepted. Applications must be submitted through the Office of Justice Programs’ online Grants Management System (GMS). NIJ suggests you begin the process early, especially if this is the first time you have used the system. To begin, go to <http://www.ojp.usdoj.gov/fundopps.htm>.

- B. Relevance of the project for policy and practice:** Higher quality proposals clearly explain the practical implications of the project. They connect technical expertise with policy and practice. To ensure that the project has strong relevance for policy and practice, some researchers and technologists collaborate with practitioners and policymakers. You may include letters showing support from practitioners, but they carry less weight than clear evidence that you understand why policymakers and practitioners would benefit from your work and how they would use it. While a partnership may affect State or local activities, it should also have broader implications for others across the country.

- C. Equal opportunity for all applicants:** It is OJP policy that faith-based and community organizations that statutorily qualify as eligible applicants under OJP programs are invited and encouraged to apply for awards. Faith-based and community organizations will be considered for an award on the same basis as any other eligible applicants and, if they receive an award, will be treated on an equal basis with non-faith-based and community organization grantees in the administration of such awards. No eligible applicant or grantee will be discriminated against on the basis of its religious character or affiliation, religious name, or the religious composition of its board of directors or persons working in the organization.

- D. Cofunding is not required:** You are not required to combine NIJ funds with other funds (for example, you do not need matching funds), but if you intend to use multiple funding sources to support your proposed effort, the budget you submit must show the other funds.

- E. Number of grants to be awarded:** NIJ’s grant award process is highly competitive. The number of awards to be made depends on the availability of funds and the number and quality of applications received.

- F. When awards will be made:** The review and approval process takes about 6 months. Therefore, you should not propose to begin work until at least 6 months after the deadline on the cover of this solicitation. Also, you should not expect to receive a decision in writing for at

least 6 months after that date. Lists of awards are updated regularly on NIJ's Web site at <http://www.ojp.usdoj.gov/nij/funding.htm>.

- G. Financial audits are required:** If your organization spends \$500,000 or more of Federal funds during the fiscal year, you may be asked to submit an organization-wide financial and compliance audit report before any award is made. The audit must be performed in accordance with the U.S. General Accounting Office Government Accounting Standards and must conform to Chapter 19 of the Office of Justice Programs' *Financial Guide* (available at <http://www.ojp.usdoj.gov/FinGuide>). You may include the costs of complying with these audits in the proposed budget submitted as part of your application. Detailed information regarding the independent audit is available in Office of Management and Budget Circular A-133 (available at <http://www.whitehouse.gov/omb/circulars>).
- H. An environmental assessment may be required:** All award recipients must comply with the National Environmental Policy Act (NEPA). To ensure NEPA compliance, NIJ may require some award recipients to submit additional information.
- I. A DUNS number is required:** The Office of Management and Budget requires that all businesses and nonprofit applicants for Federal funds include a DUNS (Data Universal Numeric System) number in their application for a new award or renewal of an award. Applications without a DUNS number are incomplete. A DUNS number is a unique nine-digit sequence recognized as the universal standard for identifying and keeping track of entities receiving Federal funds. The identifier is used for tracking purposes and to validate address and point of contact information. NIJ will use the DUNS number throughout the grant life cycle. Obtaining a DUNS number is a free, one-time activity. Obtain one by calling 1-866-705-5711 or by applying online at <http://www.dunandbradstreet.com>. Individuals are exempt from this requirement.
- J. What will *not* be funded:** Typically, NIJ *does not* fund the following:
1. Provision of training or direct service.
 2. Proposals to evaluate, validate, or implement existing forensic DNA technologies; proposals lacking a research and/or development component; or proposals that are otherwise nonresponsive to the general goals of this solicitation.
- K. Funds cannot be used to lobby:** Under the Anti-Lobbying Act (18 U.S.C. § 1913), grantees generally may not use funds to support the enactment, repeal, or modification of any law, regulation, or policy at any level of government. For the complete rules and regulations, see "NIJ Guidelines for Submitting Applications" at <http://www.ojp.usdoj.gov/nij/funding.htm> and OJP's *Financial Guide* at <http://www.ojp.usdoj.gov/FinGuide>.

L. Call for assistance:

1. For technical guidance about using the Grants Management System, call the hotline at 1-888-549-9901.
2. For questions about this solicitation, the research being solicited, or other NIJ funding opportunities, contact the U.S. Department of Justice Response Center at 1-800-421-6770.

IV. Selection Criteria

NIJ is firmly committed to the competitive process in awarding grants. All proposals are subjected to an independent peer-review panel evaluation. External peer-review panelists consider both technical and programmatic merits. Panelists are selected based on their expertise in subject areas pertinent to the proposals.

Peer-review panelists evaluate each proposal and give their assessments to NIJ. NIJ staff then recommend to the NIJ Director which proposals are most worthy of an award. The Director makes final award decisions.

Successful applicants must demonstrate the following:

A. Understanding of the problem and its importance.

Include appropriate scientific and legal citations to demonstrate awareness of the problem and the potential contribution of the proposed research to the forensic DNA community.

B. Quality and technical merit.

1. Awareness of the state of current research or technology.
2. Soundness of methodology and analytic and technical approach.
3. Feasibility of proposed project and awareness of pitfalls.
4. Innovation and creativity (when appropriate).

C. Impact of the proposed project.

1. Potential for significant advances in scientific or technical understanding of the problem.
2. Potential for significant advances in the field.
3. Relevance for improving the policy and practice of criminal justice and related agencies and improving public safety, security, and quality of life.

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4. Affordability and cost effectiveness of proposed end products, when applicable (e.g., purchase price and maintenance costs for a new technology or cost of training to use the technology).
 5. Perceived potential for commercialization and/or implementation of a new technology (when applicable).

D. Capabilities, demonstrated productivity, and experience of applicants.

1. Qualifications and experience of proposed staff.
2. Demonstrated ability of proposed staff and organization to manage the effort.
3. Adequacy of the plan to manage the project, including how various tasks are subdivided and resources are used.
4. Successful past performance on NIJ grants and contracts (when applicable).

E. Budget.

1. Total cost of the project relative to the perceived benefit.
2. Appropriateness of the budget relative to the level of effort.
3. Use of existing resources to conserve costs.

F. Dissemination strategy.

1. Well-defined plan for the grant recipient to disseminate results to appropriate audiences, including researchers, practitioners, and policymakers.
2. Suggestions for print and electronic products NIJ might develop for practitioners and policymakers.

V. Requirements for Successful Applicants

If your proposal is funded, you will be required to submit several reports and other materials as follows:

- A. Final report:** The final report should be a comprehensive overview of the project and should include a detailed description of the project design, data, and methods; a full presentation of scientific findings; and a thorough discussion of the implications of the project findings for criminal justice practice and policy. It must contain an abstract of no more than 400 words and an executive summary of no more than 2,500 words.

A draft of the final report, abstract, and executive summary must be submitted 90 days before the end date of the grant. The draft report will be peer reviewed upon submission. The reviews will be forwarded to the principal investigator with suggestions for revisions. The principal investigator must then submit the revised final report, abstract, and executive summary by the end date of the grant. The abstract, executive summary, and final report must be submitted in both paper and electronic formats.

For evaluation studies, the report should include a section on measuring program performance. This section should outline the measures used to evaluate program effectiveness, modifications made to those measures as a result of the evaluation, and recommendations regarding these and other potential performance measures for similar programs. (This information will be particularly valuable to NIJ and other Federal program agencies in implementing performance measures for federally funded criminal justice programs.)

- B. Interim reports:** Grantees must submit quarterly financial reports, semi-annual progress reports, and a final progress report. Future awards and fund drawdowns may be withheld if reports are delinquent. Post-award reporting requirements are described in “NIJ Guidelines for Submitting Applications,” available at <http://www.ojp.usdoj.gov/nij/funding.htm>.
- C. Documents that protect the confidentiality of information and human subjects:** Federal regulations require applicants for NIJ funding to outline specific procedures for protecting private information about individuals as part of the Privacy Certificate submitted with the application package. For complete details, see “NIJ Guidelines for Submitting Applications,” available at <http://www.ojp.usdoj.gov/nij/funding.htm>.
- D. Electronic data:** Some grant recipients will be required to submit electronic data and supporting documentation, such as a codebook or dictionary, capable of being re-analyzed and used by other researchers. The materials must be submitted by the end date of the grant. Grant applicants should ensure that the proposed timeline and budget accommodate these requirements.
- E. Performance guidelines:** NIJ collects data to comply with the Government Performance and Results Act (GPRA), Public Law 103-62. Generally, these data are contained in a grantee’s final report (discussed in Section V of this solicitation), but NIJ may request additional information to facilitate future planning and to ensure accurate reporting to Congress and others on the measurable results of grants. For complete details, see “NIJ Guidelines for Submitting Applications,” available at <http://www.ojp.usdoj.gov/nij/funding.htm>.

Tips for Submitting Your Application

1. Begin the application process early—especially if you have never used the online Grants Management System before. NIJ will not accept applications received after the closing date and time listed on the cover. To start the process, go to <http://www.ojp.usdoj.gov/fundopps.htm>.
2. Be sure your application package includes—
 - Abstract of no more than 400 words.
 - Complete budget, including detailed worksheet and narrative.
 - Program narrative.
3. Review “NIJ Guidelines for Submitting Applications” for complete instructions, available at <http://www.ojp.usdoj.gov/nij/funding.htm>.
4. Although your proposal may budget for the purchase of equipment if the equipment is necessary to conduct the project, NIJ will not fund applications that are primarily to purchase equipment, materials, or supplies.
5. Call for help:
 - For technical guidance about the Grants Management System, call the hotline at 1-888-549-9901.
 - For questions about this solicitation, the research being solicited, or other NIJ funding opportunities, contact the U.S. Department of Justice Response Center at 1-800-421-6770.

View or print a copy of this document from the NIJ Web site (<http://www.ojp.usdoj.gov/nij/funding.htm>) or request one by calling NCJRS at 1-800-851-3420 or e-mailing askncjrs@ncjrs.org.

The National Institute of Justice is the research, development, and evaluation agency of the U.S. Department of Justice.

NIJ provides objective, independent, evidence-based knowledge and tools to enhance the administration of justice and public safety.

NIJ is a component of the Office of Justice Programs, which also includes the Bureau of Justice Assistance, the Bureau of Justice Statistics, the Office of Juvenile Justice and Delinquency Prevention, and the Office for Victims of Crime.