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# National Institute of Justice

S o l i c i t a t i o n

*Jeremy Travis, Director*

*June 1998*

## Forensic Document Examination Validation Studies

**APPLICATION DEADLINE:**

October 16, 1998

## Forensic Document Examination Validation Studies

### I. Introduction

Forensic Document Examination (FDE) has played an important investigative and forensic role in many types of crime, from passing bad checks to kidnapping and homicide. Since the seminal ruling in *United States v. Starzecpyzel*, (S.D.N.Y. 1995), however, the judicial system has challenged FDE, especially handwriting identification, to demonstrate its scientific validity and reliability as forensic evidence. If handwriting identification fails to meet standards for admissibility of scientific evidence [*Daubert v. Merrill Dow Pharmaceuticals* (113 S.Ct. 2786)], its investigative role may continue, but its role in the courts will be further diminished. Therefore, the purpose of this solicitation is to determine the scientific validity of handwriting identification.

### II. Background

In July, 1996, NIJ held a Workshop for Planning a Research Agenda for Questioned Document Examination (now called Forensic Document Examination). The workshop participants included practicing forensic document examiners from local, state, and Federal crime laboratories, private practice examiners, attorneys, and researchers from the fields of neurology, computer science, engineering, statistics, and linguistics. The workshop participants reached consensus that the field needs:

- ! First, basic research to determine the scientific validity of *individuality in handwriting* based on measurement of features, quantification, and statistical analysis.
- ! Second, procedures for comparing handwriting that are standardized and validated.

Basic research into the individuality of handwriting requires objective measurement and statistical

analysis. Validation could be performed in the context of existing computer systems for handwriting comparison which offer an important source of measurements of handwriting. Other related technologies which may be easily adaptable to the quantification of handwriting include: data mining, image and/or multimedia search engines, intelligent agents, signal processing, voice identification, automated vision robotics, data visualization, and pattern recognition.

Standardizing procedures requires a community-based effort. The FBI formed the Technical Working Group on Forensic Document Examination (TWGDOC) in May 1997. At the first meeting of TWGDOC, the importance of standardizing procedures for handwriting comparison was again recognized as a primary task. TWGDOC's first sub-group, Standard Operating Protocols, was formed and has been meeting regularly since. Meanwhile, other FDE groups have also been developing standard procedures. Such procedures must be based, however, on more than community-based agreement. Procedures must be tested statistically in order to demonstrate that following the stated procedures allows analysts to produce correct results with acceptable error rates. This has not yet been done. Technologies which may be useful here include: quality control, experimental design, protocol evaluation, and cognitive and perceptual psychology.

### III. Areas of Research Required

#### A. Statistical Validation of Individuality in Handwriting

The proposed research must address the question of individuality in handwriting. It is required that the proposed research application include:

- Data set (a representative sample from U.S. population)
- Measurement Tools (feature selection and extraction, computer or manual systems)

- Statistical Analysis (including error rates)

## B. Statistical Validation of Standard Operating Procedures for Handwriting Comparison

The proposed research must address the question of whether Standard Operating Procedures are valid and reproducible. It is required that the proposed research application include:

- Data set
- Standard Operating Procedures (TWGDOC or others)
- Experimental designs
- Statistical Analysis

## IV. How to Apply

Those interested in submitting proposals in response to this solicitation must complete the required application forms and submit related required documents. (See below for how to obtain application forms and guides for completing proposals.) Applicants must include the following information/forms to qualify for consideration:

- Standard Form (SF) 424—Application for Federal Assistance
- Assurances
- Certifications Regarding Lobbying, Debarment, Suspension and Other Responsibility Matters; and Drug-Free Workplace Requirements (one form)
- Disclosure of Lobbying Activities
- Budget Detail Worksheet
- Budget Narrative
- Negotiated indirect cost rate agreement (if appropriate)
- Names and affiliations of all key persons from applicant and subcontractor(s), advisors, consultants, and advisory board members. Include name of principal investigator, title, organizational affiliation (if any), department (if institution of higher education), address, phone, and fax
- Proposal abstract

- Table of contents
- Program narrative or technical proposal
- Privacy certificate
- References
- Letters of cooperation from organizations collaborating in the research project
- Résumés
- Appendixes, if any, e.g., list of previous NIJ awards, their status, and products (in NIJ or other publications)

**Proposal abstract.** The proposal abstract, when read separately from the rest of the application, is meant to serve as a succinct and accurate description of the proposed work. Applicants must concisely describe the research goals and objectives, research design, and methods for achieving the goals and objectives. Summaries of past accomplishments are to be avoided, and proprietary/confidential information is not to be included. Length is not to exceed 400 words. Use the following two headers:

### **Project Goals and Objectives:**

### **Proposed Research Design and Methodology:**

**Page limit.** The number of pages in the “Program Narrative” part of the proposal must not exceed 30 (double-spaced pages).

**Due date.** The original deadline for this solicitation was August 14, 1998. The deadline has now been extended to October 16, 1998. If proposals were submitted prior to August 14, 1998, applicants will have the opportunity to revise their submissions; such applicants will be notified by mail of this opportunity.

**Award period.** In general, NIJ limits its grants and cooperative agreements to a maximum period of 12 or 24 months. However, longer budget periods may be considered.

**Number of awards.** NIJ anticipates supporting up

to two (2) grants under this solicitation.

**Award amount.** Tentatively, funds totaling \$500,000 will be made available for this NIJ solicitation.

**Applying.** Two packets need to be obtained: (1) application forms (including a sample budget worksheet) and (2) guidelines for submitting proposals (including requirements for proposal writers and requirements for grant recipients). To receive them, applicants can:

- Access the Justice Information Center on the web:

<http://www.ncjrs.org/fedgrant.htm#NIJ>

or the NIJ web site:

<http://www.ojp.usdoj.gov/NIJ/funding.htm>

These web sites offer the NIJ application forms and guidelines as electronic files that may be downloaded to a personal computer.

- Request hard copies of the forms and guidelines by mail from the National Criminal Justice Reference Service at 800-851-3420 or

from the Department of Justice Response Center at 800-421-6770 (in the Washington, D.C., area, at 202-307-1480).

- Request copies by fax. Call 800-851-3420 and select option 1, then option 1 again for NIJ. Code is 1023.

**Guidance and information.** Applicants who wish to receive additional guidance and information may contact the U.S. Department of Justice Response Center at 800-421-6770. Applicants may wish to discuss their prospective research topics with Dr. Richard M. Rau, NIJ Program Manager, 202-307-0648.

**Send completed forms to:**

[Solicitation name--from title on cover]  
National Institute of Justice  
810 Seventh Street, N.W.  
Washington, D.C. 20531  
[overnight courier ZIP code 20001]

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**U.S. Department of Justice**  
Office of Justice Programs  
*National Institute of Justice*

*Washington, DC 20531*

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