

ABSTRACT

Master of Science in Forensic Sciences
To be Offered by Purdue University, IUPUI, Indianapolis

Objectives

The purpose of the proposed Master of Science in Forensic Science program is to provide highly qualified Indiana students and students from around the rest of the U.S. with the opportunity to pursue graduate education in the forensic sciences. There are currently no graduate-level forensic science programs in Indiana. This program will produce cutting edge research and well qualified students that will directly benefit the forensic science and law enforcement communities in Indiana and throughout the United States. The proposed program will build upon the newly founded Bachelor of Science in Forensic and Investigative Sciences program at IUPUI and further foster ties between IUPUI and law enforcement and homeland security agencies in Indiana. Forensic science is rapidly developing and evolving into a more rigorous and sophisticated field of scientific endeavor. The demand for better educated and trained scientists is increasing rapidly. Students with graduate education in forensic science will be in greater demand in the future as leaders and managers and the proposed program will respond to that need.

Clientele to be Served

The Indiana State Police operates a network of forensic science labs throughout Indiana. In addition, Marion County and Greenwood have their own public labs. There are also several private forensic science labs in the state. They are all in need of a constant supply of well educated students to fill their future needs for scientists, especially in leadership positions. In addition, they have a constant need to solve new problems in analysis that can be met with students who engage in forensic science research as part of their education. Letters of support from both the Indiana State Police Forensic Science Lab and the Marion County/Indianapolis Forensic Science Lab indicate the need for students with a graduate education. These letters can be found in Appendix 3 of this proposal.

For many years Indiana has suffered a 'brain drain' of some of its most talented college graduates. This is due in part to a lack of jobs that provide challenge and excitement to these graduates. Students who are raised and educated in Indiana are more likely to stay here if there are good, well paying jobs. The Indiana State Police and the Marion County Forensic Services Agency have had to go outside the state to get talented scientists for their crime labs. These people, not being from Indiana, often leave for greener pastures elsewhere. The directors of both laboratories have indicated that they would hire and have greater success retaining talented students with forensic science training earned in the State of Indiana, especially if they have a graduate education. This will provide a continuing, robust market for graduates of the IUPUI program. It is also anticipated that graduates of the IUPUI program will be able to fill forensic science positions throughout the United States.

Curriculum

The proposed degree is a 35 credit hour program. There will initially be two concentrations: biology and chemistry. All students will take a core of courses in the forensic science system, practice, the profession, ethics, and law. Each student will select one of the aforementioned concentrations, which will consist of a year long laboratory sequence of courses. Full time students must do a thesis. Students who are employed full time in a forensic science or other analytical laboratory or who, for other reasons must be part time students, can elect a non thesis option. An internship will be offered to all full time students. The thesis option will consist of 25 credits of courses and 10 credits of thesis.

In addition to the above curriculum, future plans for the Forensic and Investigative Sciences Program include a partnership with the Department of Toxicology and Pharmacology in the IU School of Medicine to offer a concentration in forensic toxicology within the existing Master of Science in Toxicology. This will be dependent in part, on possible administrative changes in the State Department of Toxicology.

Employment Possibilities

The Indiana State Police are building a new crime laboratory within a few blocks of IUPUI. It is anticipated that as many as 70 new forensic scientists will be needed within the first few years of the opening of this lab in 2007. A recent national study indicated that there are more than 1900 new forensic science positions needed nationwide just to reduce case backlogs to a reasonable level. In addition there are expected to be many openings in homeland security, insurance investigation, police crime scene investigation and law enforcement positions within the federal government. A number of our graduates are expected to attend professional schools such as law, medicine and other analytical sciences. Major Ed Littlejohn, Director of the Indiana State Police Labs states: *“Graduates of this program will fill future needs in forensic laboratories as scientists, quality control analysis, and will help provide the future leaders in forensics in Indiana. Some positions of authority, notably in DNA, require a master’s degree; therefore, graduates should compete well for future laboratory positions”*.

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B. Program Description

1. Describe the proposed program and state its objectives

Students who gain entry to this program must have an undergraduate degree in a science such as chemistry, biology or a related natural or physical science. This program will develop the skills learned as an undergraduate and teach the student how they are applied to forensic evidence. The students will all learn how forensic science is practiced in the United States and how it is organized. They will learn how to be ethical forensic scientists and how to be effective scientific experts in the adversarial legal system. Each student will concentrate in one of the major laboratory areas of chemistry or biology. All full time students will have the opportunity to carry out cutting edge research in forensic science and contribute new knowledge to the field. Part time students who work full time in a crime lab or similar lab will have the opportunity to strengthen their scientific backgrounds and increase their skills and aptitudes. This program will meet all of the requirements of the *Forensic Science Education Program Accreditation Commission* and will thus be eligible for accreditation after the first two classes of students have graduated.

The specific objectives of the program are as follows:

- To develop the analytical and scientific skills of each student and orient them towards the analysis of scientific evidence
- To develop expertise in each student in the core scientific disciplines of forensic science
- To develop in each student the skills to function effectively as expert witnesses in the adversarial legal system as practiced in the United States
- To develop in each student an ethical framework that permits them to function effectively as unbiased scientists in a partisan, adversarial system
- To teach each student the principles of the law that apply to the forensic sciences

2. Describe admission requirements, anticipated student clientele, and student financial support

a. and b. The admission requirements are as follows:

- A Bachelor's degree from an accredited institution in chemistry, biology, forensic science, pharmacology/toxicology, or a related science
- A minimum GPA of 3.0 for all undergraduate work
- A score in the upper one-half in the GRE general exam
- Three letters of recommendation from faculty or others who are in a position to evaluate the candidate's potential for success in graduate work in forensic science

c. The program will serve full time students who meet the above requirements as well as students who are presently employed full time in a forensic science laboratory or other analytical laboratory

d. Enrollments will be limited. See **Table 1 – Program Enrollments and Completions** for anticipated enrollment data. This must be done to ensure that each student is given sufficient attention and resources to maximize the educational opportunity presented in this degree. The criteria that will be used to select the candidates for admission include the undergraduate GPA, the type of degree, GRE

scores, and the candidate's potential for success as revealed by letters of recommendation

- e. Funds will be requested from the School of Science to provide graduate assistantship funds for approximately one-quarter of the students enrolled in the program. It is anticipated that faculty grants and other financial opportunities will provide funding for at least another quarter of the enrolled students. The other half of the students in the program will cover their own tuition and expenses, although every effort will be made to obtain at least partial support for them. Fellowships for students will be based upon need and merit.

3. Describe the proposed curriculum

- a. Full-time students will be able to complete the degree in two years. 35 semester hours will be required in this program. They are to be distributed as follows:
 - i. All students will take the following courses:
 1. FIS 503 (3) – Professional and Ethical Issues in Forensic Science
 2. FIS 505 (3) - Legal Issues in Forensic Science
 3. LAW D774 (2) – Law and Forensic Science
 - ii. Each student will take one of the following concentrations:
 1. Forensic Chemistry:
 - a. FIS 511 (4) – Forensic Chemistry 1
 - b. FIS 512 (4) – Forensic Chemistry 2
 2. Forensic Biology:
 - a. FIS 521 (4) – Forensic Biology 1
 - b. FIS 522 (4) – Forensic Biology 2
 - iii. Full time students will take the following:
 1. FIS 699 (15) – Thesis research
 2. 4 elective credits approved by department
 - iv. Part time students will take the following:
 1. 21 credits of electives approved by department. This may include up to 6 credits of internship
- b. A sample curriculum for a full time student in the Forensic Chemistry concentration:

<u>Fall Semester</u>	<u>Spring Semester</u>	<u>Summer Semester</u>	<u>Fall Semester</u>
FIS 503 (3)	FIS 505(3)	LAW D774 (3)	FIS 699 (5)
FIS 511 (4)	FIS 512 (4)	FIS 699 (3)	
Elective (3)	FIS 699 (5)		
FIS 699 (2)			

- c. The following course exists at IUPUI in the curriculum:
LAW D774

This course has been taught yearly for the past 2 years.

- d. The following courses are under development (in the governance system for approval)

FIS 503

FIS 505

FIS 511

FIS 512

FIS 521

FIS 522

FIS 699

- e. NA

4. Describe form of recognition

- a. Master of Science in Forensic Science from Purdue University. This program offers a suite of graduate level courses and a thesis requirement that make it worthy of the Master of Science designation. Part time students will already be working in a crime lab or similar lab and will not have the need or opportunity to complete a thesis. The extra course work required in this program will make it worthy of the Master of Science designation.

- b. CIP code: 430106

- c. The following program, organizational and site information will appear on earned diplomas: Master of Science, Purdue University, Indianapolis

5. List program faculty and administrators

- a. Administration

The proposed degree will be hosted by the Purdue School of Science at IUPUI and will be administered by the School of Science

Administrators: Charles Bantz, Ph.D., Chancellor
Udea Sukhatme, Ph.D., Vice Chancellor and Dean of
Faculties
William Bosron, Ph.D., Acting Dean of the School of Science
Jay A. Siegel, Ph.D., Director of the Forensic and
Investigative Sciences Program

Faculty: Jay A. Siegel, Ph.D. – Forensic Chemistry (full time)
Richard Li, Ph.D. – Forensic Biology (full time)
Gina Ammerman – Forensic Chemistry and Microscopy
Lecturer (full time)
John Goodpaster, Ph.D. – Forensic Chemistry (full time) –
see “b” below
Anticipated future staff position in Forensic Toxicology (full
time) – see “b” below

See Appendix 1 for vitae of full time faculty of the FIS
program.

Adjunct faculty: Carl Soberalski, MS – Forensic Biology
Herbert Blitzer, BS – Forensic Imaging and Photography
Linda Chezem, J.D. – Law and Policy

- b. New faculty positions. The FIS program has received Commitment to Excellence (CTE) funding to fill two additional faculty positions for the program. CTE funding is designated to enhance undergraduate education and these two positions will be utilized in part, to expand the course offerings and mentoring in the Bachelor of Science degree in the program. In addition, the additional faculty will give the FIS program the critical mass of faculty resources to offer the graduate courses that are contemplated in this proposal. One of the new positions has been filled by Dr. John Goodpaster, who is will join the faculty in the fall of 2007. He is currently a forensic scientist with the Federal Bureau of Alcohol, Tobacco, Firearms and Explosives. The other position, planned for the future, will be in the area of forensic toxicology. The rank and position will be determined in consultation with the IU Medical School Department of Toxicology/Pharmacology.

6. Describe needed learning resources

- a. Since IUPUI already has a Bachelor's degree program in forensic and investigative sciences, the library holdings and learning facilities needed have mostly been collected and are in place. There is already a functioning forensic chemistry teaching and research laboratory facility in the Department of Chemistry and Chemical Biology and a functioning forensic biology laboratory in the Department of Biology. The new forensic chemist will take over the forensic chemistry laboratory facilities from Dr. Siegel, the Director, who will be teaching lecture and seminar courses and administering the program. Teaching and graduate student research labs will be needed.

7. Describe other program strengths

- a. There are a number of aspects of this program that make it distinctive.
- It will be the first and only graduate-level program in forensic science in Indiana and one of only about a dozen quality programs of its type in the United States.
 - It is the only forensic science program in the United States that has law courses taught by law school faculty that are tailored for forensic science students.
 - It will be the only forensic science program in the United States that offers courses in alcohol abuse public policy and forensic epidemiology
 - The new forensic science laboratory of the Indiana State Police will be very near the IUPUI campus, which will strengthen the already strong ties between IUPUI and ISP
 - The present full time faculty of the program have combined more than 50 years experience in forensic science and legal issues
- b. NA

C. Program Rationale

1. Institutional Factors

1. The mission of the IUPUI campus is to provide for its constituents excellent in:

- i. Teaching and learning
- ii. Research, scholarship, and creative activity
- iii. Civic engagement, locally, nationally, and globally

The proposed Master's degree program in Forensic and Investigative Sciences addresses all of these aspects of the mission. This is a scientifically rigorous program that requires a strong foundation in the natural sciences. This program will have a research component that will develop new knowledge in the forensic sciences. Forensic science is an applied, multidisciplinary field whose knowledge is directly applied to law enforcement. This degree program is not offered anywhere else in Indiana and will complement the present Bachelor's degree program in forensic and investigative sciences at IUPUI. The program will involve cooperation with many other units on the IUPUI campus in research and teaching. For example, we are exploring ties with the Department of Anthropology to develop research opportunities for their students and possibly joint courses in the future. Our Bachelor's degree program already has concentrations in psychology, criminal justice, geology, chemistry, biology, environmental and health science investigation and computer science. Forensic science programs, including the Bachelor's degree program at IUPUI have been attracting large numbers of women and significant numbers of minority students in recent years, and this trend would be expected to continue and perhaps increase, with the new graduate program. The three full time faculty in the program at present include an Asian-American male and a woman.

The mission of the School of Science, which will host the proposed degree program, is "To serve and improve society by educating our students as discerning citizens and leaders in productive careers, and by advancing knowledge and understanding through basic and applied research". Again, the proposed degree is in complete alignment with this mission because it will educate students in an applied science for which career opportunities are increasing rapidly. The Dean of the School of Science has made research a high priority for all programs. The proposed Master's degree will have a strong research component; all full time students will have to do a research based thesis. Students will also be involved in joint research projects with the Indiana State Police, Marion County Forensic Science Labs and other public and private laboratories.

- When Dr. Jay Siegel was hired as the Director of the FIS program in the fall of 2004, the search committee and other faculty and administrators indicated that they had considered a Master's degree when the FIS program was being developed. They felt that the campus lacked the expertise needed to put this type of program together and felt that IUPUI would be the ideal host for an undergraduate program, and it is. Dr. Siegel has had extensive experience in starting Master's programs in forensic science and came from Michigan State University where he started one and directed it for 14 years. From the beginning, he felt that a Master's degree would be very successful at IUPUI given its mission and resources. In the year that he has been here, he has had numerous discussions with personnel at all levels of IUPUI and especially former Dean Carl Cowen about this issue. Dr. Siegel feels that this is the time to move the FIS program forward in bold, new directions and the Master's degree is ideal for this campus. The field of forensic science is progressing very rapidly today and many crime labs, including the Indiana State Police and the Marion County lab are starting to look for employees who have a graduate education.

The proposed timeline for the development of this proposal is as follows:

- Fall 2005 – prepare documentation for new Master's program. Begin approval process for new supporting courses
- Fall 2006 – begin recruiting process for new faculty member in forensic chemistry

- Fall 2006 – begin recruiting process for new faculty member in forensic toxicology
- Spring 2006 – start approval process in IUPUI governance system for proposed program
- Spring 2007 – complete approval process of proposed program in IUPUI and Purdue governance systems
- Spring 2007 – seek approval of new program by Indiana Higher Education Commission
- b. The proposed Master's degree in FIS will complement the present Bachelor's degree in FIS by enlarging the number of faculty, course offerings and research opportunities available to all of the students in the program. When the new Master's degree is approved, the School of Science will implement a five year program leading to the Bachelor's and Master's degrees in FIS. The Master's degree will also facilitate articulation agreements with other graduate programs on the campus. We have also been in contact with the School of Liberal Arts to see about a joint Master's in FIS and anthropology. It is anticipated that other such programs will arise after approval of the FIS Master's degree.
- c. A number of new resources were implemented when the new Bachelor's degree in FIS was begun in 2004. These included research and teaching labs in forensic chemistry and biology. These resources will be used by the proposed Master's degree program as well as the present Bachelor's program. New library resources (books and journals) were also procured as part of the FIS undergraduate program. These will also be used by the new faculty and graduate students in the proposed Master's program.
- d. The forensic chemistry and biology concentrations can be offered immediately.

2. Student demand (See Table 1: Enrollment and Completion Data)

a. The enrollment projections are based mainly on the program's capacity to educate students. We expect to take 16-20 students per year, equally divided in the concentrations of chemistry and biology. We expect that these applicants will come from all over the United States and perhaps Canada. Over the past three years, Dr. Siegel has had access to enrollment and applicant data for other universities and colleges that offer Master's degrees in forensic science and has had direct experience with Michigan State's figures. These are illustrative of the expected pool of applicants. MSU's graduate program has concentrations in forensic chemistry, biology and anthropology. For AY 2004, they attracted 180 applications total for all three concentrations and accepted 20 students. All of the accepted students had Bachelor's degrees in a natural science (the same requirement that students must have to get into the proposed IUPUI program). The average GPA for all undergraduate work of the successful applicants was approximately 3.75 on a 4.0 scale. The average aggregate GRE score was approximately 1390 on a 1600 scale. 85% of the admitted students were women. The only other graduate programs in the Midwest area are at Michigan State University and the University of Illinois at Chicago. IUPUI's program will undoubtedly attract its share of these extremely talented students.

It is anticipated that most of the students who enter the proposed Master's program will be new to IUPUI. Some may come from our Bachelor's program in FIS or other science degrees but experience shows that most will be from outside. This means that IUPUI will realize perhaps 15 new, top quality Master's students per year.

- b. See Table 1 Program Enrollments and Completions (appendix 1)

3. Transferability

The proposed Master's degree will be the only one of its type in Indiana. Most of the courses will be in the area of forensic science. None of these courses are being offered in Indiana and so students will not be able to transfer courses into the IUPUI program or from this program to another graduate program in Indiana. Should more Master's programs begin in forensic science in Indiana then each course at each program will be evaluated on its own merits when requests are made to transfer such courses into IUPUI, subject to the university's limits on acceptance of graduate credits from other universities. The same policy shall apply to students who have forensic science courses from another Master's program out of state.

4. Access to graduate and professional programs

NA

5. Demand and employment factors

In part because of advances in the science of DNA typing and other evidence technologies, forensic science laboratories in the United States have experienced explosive growth in the number of cases they are being asked to handle. This is being exacerbated by the so-called "CSI Effect", whereby juries are expecting to see scientific evidence of all types presented in even the most routine cases. This has caused prosecutors to demand that more evidence be collected by criminal investigators and sent to the lab for analysis.

- a. Geographic region to be served: Indiana as well as several other states in the Midwest including Michigan, Iowa, Wisconsin, Illinois, etc. Our students will be competitive for jobs in forensic science labs anywhere in the United States

b. Review of Literature:

Recently, Joseph Peterson collected and published census data for publicly funded crime labs for 2002. It provides the only hard data about the status and needs of the 351 publicly funded labs in the US. Some of the highlights of this data are given below. Peterson, J.L. and Hickman, M.J., **Census of Publicly Funded forensic Crime Laboratories, 2002**, Bureau of Justice Statistics Bulletin, Feb. 2005.

- Approximately 9,300 FTE personnel were employed in 2002
- Nearly 2.7 million cases were received by these labs in 2002. Because each case may contain many items, this means that there were far more requests for lab tests.
- These labs ended 2002 with over 500,000 backlogged requests for forensic services. This represents a 70% increase over the backlog that existed at the beginning of the year.
- The Nation's publicly funded labs estimated that about **1,900 additional FTEs** would have been needed to provide a 30-day turnaround for all requests for services received in 2002
- A typical publicly funded laboratory received 4,900 requests for services and completed 4,600 requests, resulting in a backlog of 390 requests.
- 41% of these laboratories reported outsourcing nearly 240,000 requests for forensic services.

According to projections published by the U.S. Bureau of Labor Statistics in 2003, the number of employed forensic science technicians will increase between the year 2000 and the year 2010 by 15% with a low unemployment rate (between 2.0% and 3.6 %) and a high median annual earnings index. The median annual salary is projected to be \$47,490. However, according to the American Academy of Forensic Sciences, annual earnings can be as high as \$80,000, depending on experience. As more crime labs hire M.S. level personnel, this will inevitably increase the salary commanded by this workforce in the future.

In addition to the data described above, the Indiana Department of Workforce Development predicted in the 4th Edition of the *Indiana Career Cluster Guide* (2002) a substantial number (over 1000) of Indiana job openings in the area of forensic science and police investigation between the year 1998 and the year 2008. These job opportunities are due to a projected growth rate of 16.0% and a projected ‘turnover’ or ‘replacement’ rate of 24.2% over this ten-year period.

Other employment opportunities exist as well, including employment with government agencies (EPA, Homeland Security, USDA), utilities, real estate developers, and other entities that routinely analyze food, soil, air, and/or water quality. These opportunities are so numerous that it is impossible to cite all the relevant employment data in this document. Nevertheless, it is clear that graduates of the proposed degree program will have many employment options.

The picture that this data paints is one of a growing need for well educated and trained forensic scientists. Although many new hires have chemistry or biology backgrounds, increasingly, labs are looking for graduates with a rigorous science and forensic science education, in order to lessen training periods and get scientists up to speed more quickly. At the same time, the number of forensic science educational programs in colleges and universities is exploding. More than 140 are listed in the American Academy of Forensic Sciences web site. Many of these, however, are not rigorous in the sciences or forensic sciences. This is due in part to the lack of educators and program directors with both science and forensic science in their background. Many crime lab directors are concerned about this proliferation of programs and the preparedness of some of their graduates. This has brought about an accreditation process set up by the American Academy of Forensic Sciences and the American Society of Crime Lab Directors and funded by the National Institute of Justice. The process is being developed and implemented by the Forensic Science Education Program Accreditation Commission (FEPAC). This process is new and only eleven programs have been accredited thus far. The curricula for the BS in Forensic and Investigative Sciences and for the proposed Master of Science in Forensic Science will meet all of the FEPAC standards and are expected to be accredited after two classes of students have graduated (spring of 2008 for the BS program and spring of 2010 for the MS program).

The need for more forensic scientists in our crime labs combined with the need for more and better educated forensic science graduates has resulted in a great opportunity for IUPUI and the state of Indiana.

c. Potential Employers:

National: The National Institute of Justice, the Department of Justice, including the FBI, ATF, and DEA, the Environmental Protection Agency, the Department of Homeland Security, and the Department of Agriculture.

State: The Indiana State Police Forensics Laboratory, the Indianapolis-Marion County Forensic Services Agency, the Indianapolis Water Company and other utilities, Homeland Security agencies. The Indiana State Police and the Marion County Forensic Science Labs are in support of this program because of its potential to supply them with talented, well educated graduate students in forensic science (see letters of support in Appendix 2). Because no forensic science degree programs exist in the State of Indiana, it is clear that the demand for graduate-level forensic scientists exceeds the supply.

d. Independent Needs Analysis:

As of October 20, 2005, the American Academy of Forensic Sciences has listed 82 job opportunities in forensic science at one time on its web site (www.aafs.org/employ/list1.htm) and the American Society of Crime Lab Directors listed an additional 42 jobs on its web site (www.asclld.org/employment.html). In addition, the Indiana State Police Forensics Laboratory expects to hire as many as 70 technicians over the next two years (Carl Sobieralski, Director of the DNA Unit at the Indiana State Police Lab, personal communication). Mr. Sobieralski states that, “A top priority of the Indiana State Police Laboratory is to produce a work product of the highest quality. Towards that end, employee retention is an important component. In order to become competent and productive, it takes more than a year of ‘on the job’ training to become a DNA analyst. Locally schooled and qualified applicants tend to be the best return of invested training dollars.” Thus, it is clear that graduates of the proposed degree program will have many employment opportunities locally, as well as nationally, in the field of forensic science.

e. Program Experience:

Graduate programs in Forensic Science similar to the program proposed here currently exist at Michigan State University, the University of Illinois at Chicago, and Eastern Kentucky University. With approximately 20 new students admitted per year, we expect a total of 20-25 students in the program at any given time (this includes full-time and a limited number of part-time students).

6. Regional, State, and National Factors.

a. As stated above, no comparable graduate programs in forensic science exist in the State of Indiana.

b. External Agencies: The proposed degree program was designed to meet the standards drafted by The Technical Working Group for Forensic Science Education and Training (TWGED), which do not allow for much elective coursework. The Forensic Education Programs Accreditation Committee of the American Academy of Forensic Sciences will use these standards to accredit graduate degree programs in forensic science. It was the conviction of the Forensic & Investigative Science Curriculum Committee at IUPUI to design the proposed program with these standards in mind. This will ensure accreditation as soon as possible. (FEPAC requires that the program graduate two classes prior to applying for accreditation).

D. Program Implementation and Evaluation

- a. Implementation of the FIS Master’s program will begin in the Fall of 2008. Institutional and ICHE approval of the program is expected by the end of the 2007-08 academic year. Institutional approval of all new courses is expected by the end of the 2007-08 academic year. Applications for admission from new students in the program will be accepted starting in the fall of 2007 for matriculation in fall 2008. The forensic chemistry and biology concentrations can be offered immediately. A possible forensic toxicology concentration can be added when the forensic toxicologist is hired.

Evaluation of the Forensic & Investigative Science degree program will be performed annually by the FIS External Board of Visitors and the Internal Advisory Committee, both of which meet twice yearly. Evaluation of the program will help to ensure that the program meets the FEPAC standards.

As suggested by the Indiana Commission for Higher Education, annual reviews of the program will focus on quality and efficiency, appropriateness, availability of similar programs, personal and social utility, student demand, student access, flexibility of program design, market demand, inter-institutional and inter-departmental cooperation, and flexibility of providing instruction. Accordingly, program success will be measured by several criteria, which are listed below:

1. The curriculum will be compared annually to the accreditation standards in this rapidly evolving field. Curriculum change, course development, and course replacement will be done as needed to ensure accreditation of the program by the FEPAC. Having four dedicated forensic scientists on the faculty will ensure that the program is both dynamic and rigorous.
2. Student success and satisfaction will be monitored continually. This function will be performed by an advisor/recruiter, who will keep records of student application, matriculation, performance, and retention, graduation rates, etc. Student satisfaction surveys will also be collected to assess student satisfaction with courses and other program elements.
3. Employment statistics of program graduates will be recorded to assess the employability of graduates. It is imperative that graduates of the proposed program have the necessary skills to meet the growing need for forensic scientists in the State of Indiana. Consequently, detailed employment records of all alumni will be generated. In addition, employers of IUPUI alumni will be surveyed to determine whether IUPUI graduates have the quantitative and analytical skills to perform at a high level in forensic & investigative science, and alumni of the program will be surveyed to determine whether they were adequately prepared for their jobs. These data will make it possible to determine whether the program objectives, which are to meet the demand for trained forensic scientists in Indiana and to enable Indiana students to pursue high quality graduate education in forensic science, have been met.
4. A financial analysis of the program will be conducted annually.

The evaluation criteria described above include both quantitative and qualitative components. Student performance, satisfaction, and retention, graduation rates, and employment statistics will be analyzed quantitatively. In addition, the curriculum will be qualitatively compared to the accreditation standards of the American Academy of Forensic Sciences and opinions from employers and alumni will be solicited. These measures will guarantee the effectiveness of the Forensic & Investigative Science program at IUPUI.

SUMMARY OF NEW DEGREE PROGRAM PROPOSAL

- I. Campus:** Indiana University-Purdue University Indianapolis
- II. Proposed Degree:** Master of Science in Forensic Science
- III. Projected Date of Implementation:** Fall 2008
- IV. List the major objectives of the proposed program, and describe its chief features briefly:**

This proposal describes a Master's degree program in forensic science at IUPUI. The program will build upon the present Bachelor of Science degree in Forensic and Investigative Sciences begun at IUPUI in 2004. The major objectives of the program are to:

1. extend and enhance the Bachelor's degree program so that students will have the opportunity to continue their education in forensic science at IUPUI
2. meet the growing demand for graduate-level trained scientists in forensic science in Indiana and the rest of the United States
3. offer students in Indiana and elsewhere who have a Bachelor's degree in an appropriate science the opportunity to obtain a graduate degree in forensic science in Indiana.

The program will have three major features that address three audiences of students:

1. Excellent high school students will have the opportunity to obtain a Bachelor's and Master's degree in forensic science within 5 years
2. Full time students within Indiana and elsewhere who have a Bachelor's degree in an appropriate scientific discipline will be able to obtain a thesis-based Master's degree in forensic science
3. Part time students who work full time in a forensic science or similar analytical laboratory will have the opportunity to obtain a non-thesis-based Master's degree in forensic science

The program will be the first and only Master's degree in forensic science in Indiana. All students will take a concentration in forensic chemistry or biology. A unique law class, taught by Indiana University law faculty, will be offered to students in this program. Students will have opportunities to do internships in crime labs in Indiana or elsewhere. The new Master's degree program will strengthen the already close ties to the forensic science and law enforcement communities in Indiana.

V. Why is the degree needed? (Rationale)

In recent years, the use of forensic science and scientific evidence in criminal cases has increased markedly. This has been accompanied by increased sophistication and interest by the American public in forensic science. This, in turn has caused juries in cases to request and demand increased scientific evidence in trials. All of this has put greater demands upon forensic science laboratories to analyze greater amounts of evidence. There are large backlogs of cases at crime labs all over the United States. According to Joseph Peterson of the University of Illinois, there were a total of 262,000 cases backlogged in the US at the end of 2002. The Indiana State Police estimates that they will need more than 70 forensic science positions filled over the next few years to keep pace with their case load. More than 100 forensic science positions are open nationwide at any given time. Although many of these positions can be filled and are being filled by workers with a BS education, the trend is clearly towards hiring talented students with graduate education. Such graduates will be produced by the proposed Master's program and will fill the needs of crime labs in Indiana and elsewhere.

VI. Describe the student population to be served.

As described above, student interest in forensic science has increased locally and nationally. However, no institution of higher education in the State of Indiana currently offers a Master of Science degree in Forensic Science. Consequently, Indiana students interested in pursuing a career in forensic science have no choice but to leave the State and pay out-of-state fees for a graduate education in this field. The proposed degree program in forensic science will serve this under-served student population by making available a graduate degree program in the State of Indiana. These students will be more likely to seek permanent employment in the State of Indiana if they are given the chance to receive their graduate training in Indiana.

VII. How does this program complement the campus or departmental mission?

The mission of the IUPUI campus is to provide for its constituents excellence in: 1) teaching and learning, 2) research, scholarship, and creative activity, and 3) civic engagement, locally, nationally, and globally. Each of these core activities is characterized by: 1) collaboration within and across disciplines and with the community, 2) a commitment to ensuring diversity, and 3) pursuit of best practices. The proposed degree program in Forensic Science addresses every aspect of this mission statement. First, the program is rigorous. A Bachelor's degree in an appropriate science is required for admission to the program. The program requires courses in ethics, law and hands on laboratory experiences during the entire program. A thesis is required for all full time students and the faculty in the program are committed to a robust research program. The multidisciplinary nature of forensic science is embodied in this program and our students and faculty will build upon the relationships that have been developed with Indiana law enforcement and forensic science agencies as a result of the development of the BS program. These relationships will help keep the program relevant to law enforcement and its programs at the state of the art.

VIII: Describe any relationship to existing degree programs within the IU system.

There are no other graduate degree programs in the IU system or in the state of Indiana. This proposed Master's degree program will build upon the existing BS in Forensic and Investigative Sciences program that was begun in 2004 at IUPUI. In addition to the stand alone Master's degree, the School of Science has plans to implement a five year program for outstanding high school students that would lead to the BS and MS in forensic science. In addition, students who are already in the BS program and who meet the qualifications for admissions to the Master's program will be encouraged to continue their education at the Master's level. Students at IUPUI who are majoring in relevant sciences will also be recruited to continue their education at the Master's level in forensic science.

IX. List and indicate the sources (including reallocation) of any new resources (personnel, financial, learning, etc.) required to implement the proposed program.

At present the forensic and investigative sciences program at IUPUI has four faculty (two forensic chemists, one lecturer and one forensic biologist) assigned full time to the program. One of the forensic chemists is also the director of the program. The program also has a full time advisor/coordinator who handles all student advising and other administrative duties as needed. The total of four faculty members provides sufficient strength to effectively educate undergraduate and graduate students in forensic science. The new forensic chemist will be able to make use of present forensic chemistry lab facilities in the program. The program will need additional recurring money to support the laboratories of the forensic science faculty. The resources for this position will be procured through the School of Science, including money being brought into the School

through tuition, grants and other activities of the FIS program. Funds will also be sought from the University for Master's students' support. The FIS program also has one additional CTE position that will be filled in the future with someone with expertise in forensic toxicology. This position will be filled in partnership with the IU School of Medicine Department of Toxicology/Pharmacology.

X. Describe any innovative features of the program (e.g., involvement with local or regional agencies, offices, etc.; cooperative efforts with other institutions; opportunities for students; etc.).

The proposed Master's degree in forensic science will be unique in several ways. First, it will be the only graduate program in forensic science in Indiana and one of only a handful nationwide. Second, a five year program leading to the BS and MS in forensic science is offered at few other institutions in the whole country. Third is the unique partnership between the forensic science program and the IU Law School through the *Law and Forensic Science* course that will be offered by Law School faculty. Fourth, the structure of the program will be unique in that it permits students to concentrate in one of the two major areas of forensic science lab work; chemistry and biology. Finally, there will be an internship program with crime labs throughout the US that will give our students hands-on experience in forensic science as part of their education. There will also be strong collaborations between our students and the crime labs in Indiana so that their thesis research will reflect the needs of forensic science labs.

Appendix 1

Budget and Enrollment Tables

Table 1 – Program Enrollments and Completions

Table 2A – Total Direct Program Costs and Sources of Program Revenue

Table 2B – Detail on Incremental or Out-of-Pocket Direct Program Costs

Table 3 – New Academic Degree Program Proposal Summary

TABLE 1: PROGRAM ENROLLMENTS AND COMPLETIONS
Annual Totals by Fiscal Year (Use SIS Definitions)

	Year 1 2007-08	Year 2 2008-09	Year 3 2009-10	Year 4 2010-11	Year 5 2011-12
A. Program Credit Hours Generated					
1. Existing Courses	254	260	260	260	260
2. New Courses	318	340	340	340	340
Total	572	600	600	600	600
B. Full-time Equivalents (FTEs)					
1. Generated by Full-time Students	23	23	23	23	23
2. Generated by Part-time Students	1	3	3	3	3
Total	24	25	25	25	25
3. On-Campus Transfers	0	0	0	0	0
4. New-to-Campus	24	25	25	25	25
C. Program Majors (Headcounts)					
1. Full-time Students	18	18	18	18	18
2. Part-time Students	2	4	4	4	4
Total	20	22	22	22	22
3. On-Campus Transfers	0	0	0	0	0
4. New-to-Campus	20	22	22	22	22
5. In-State	10	12	12	12	12
6. Out-of-State	10	10	10	10	10
D. Program Completions	18	20	20	20	20

Campus: Indiana University-Purdue University Indianapolis
Program: Master of Science in Forensic Sciences
Date: 18 November 2005

TABLE 2A:
TOTAL DIRECT PROGRAM COSTS AND SOURCES OF PROGRAM REVENUE

	Year 1		Year 2		Year 3		Year 4		Year 5	
	FTE	2007-08	FTE	2008-09	FTE	2009-10	FTE	2010-11	FTE	2011-12
A. Total Direct Program Costs										
1. Existing Departmental Faculty Resources	0.0	\$ 0	0.0	\$ 0	0.0	\$ 0	0.0	\$ 0	0.0	\$ 0
2. Other Existing Resources		0		0		0		0		0
3. Incremental Resources (Table 2B)		325,300		336,400		336,400		336,400		336,400
TOTAL		\$ 325,300		\$ 336,400		\$ 336,400		\$ 336,400		\$ 336,400
B. Sources of Program Revenue										
1. Reallocation		\$ 0		\$ 0		\$ 0		\$ 0		\$ 0
2. New-to-Campus Student Fees		244,600		250,600		250,600		250,600		250,600
3. Other (Non-State)		41,000		42,000		42,000		42,000		42,000
4. New State Appropriations										
a. Enrollment Change Funding		39,700		43,800		43,800		43,800		43,800
b. Other State Funds		0		0		0		0		0
TOTAL		\$ 325,300		\$ 336,400		\$ 336,400		\$ 336,400		\$ 336,400

TABLE 2B:
DETAIL ON INCREMENTAL OR
OUT-OF-POCKET DIRECT PROGRAM COSTS

	Year 1		Year 2		Year 3		Year 4		Year 5	
	FTE	2007-08	FTE	2008-09	FTE	2009-10	FTE	2010-11	FTE	2011-12
1. Personnel Services										
a. Faculty	1.0	95,000	2.0	190,000	2.0	190,000	2.0	190,000	2.0	190,000
b. Support Staff	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
c. Graduate Teaching Assistants	2.0	40,000	2.0	40,000	2.0	40,000	2.0	40,000	2.0	40,000
Total Personnel Services		135,000		230,000		230,000		230,000		230,000
2. Supplies and Expense										
a. General Supplies and Expense		19,800		22,400		22,400		22,400		22,400
b. Recruiting		0		0		0		0		0
c. Travel		0		0		0		0		0
d. Library Acquisitions		0		0		0		0		0
Total Supplies and Expense		19,800		22,400		22,400		22,400		22,400
3. Equipment										
a. New Equipment Necessary for Program										
b. Routine Replacement										
Total Equipment		0		0		0		0		0
4. Facilities		88,500		0		0		0		0
5. Student Assistance										
a. Graduate Fee Scholarships		82,000		84,000		84,000		84,000		84,000
b. Fellowships		0		0		0		0		0
Total Student Assistance		82,000		84,000		84,000		84,000		84,000
Total Incremental Direct Costs	\$	325,300	\$	336,400	\$	336,400	\$	336,400	\$	336,400

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY
18 November 2005

I. Prepared by Institution

Institution/Location: Indiana University-Purdue University Indianapolis
 Program: Master of Science in Forensic Sciences
 Proposed CIP Code: 430106
 Base Budget Year: 2005-06

	Year 1 2007-08	Year 2 2008-09	Year 3 2009-10	Year 4 2010-11	Year 5 2011-12
Enrollment Projections (Headcount)	20	22	22	22	22
Enrollment Projections (FTE)	24	25	25	25	25
Degree Completion Projection	18	20	20	20	20
New State Funds Requested (Actual)	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
New State Funds Requested (Increases)	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0

II. Prepared by Commission for Higher Education

New State Funds to be Considered for Recommendation (Actual)	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____
New State Funds to be Considered for Recommendation (Increases)	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____

Comment:

CHE Code:
 Campus Code:
 County Code:
 Degree Level:
 CIP Code:

MS For Sci

:1746enls enrollment

	Headcount Enrollment					Total Credit Hours/head					New Course Cr Hr/head					Support Course Cr Hr/head				
	Yr.1	Yr.2	Yr.3	Yr.4	Yr.5	Yr.1	Yr.2	Yr.3	Yr.4	Yr.5	Yr.1	Yr.2	Yr.3	Yr.4	Yr.5	Yr.1	Yr.2	Yr.3	Yr.4	Yr.5
New HC																				
Res																				
FT																				
1	8	8	8	8	8	30	30	30	30	30	17	17	17	17	17	0	0	0	0	0
2						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PT																				
1	2	2	2	2	2	16	16	16	16	16	6	6	6	6	6	0	0	0	0	0
2						14	14	14	14	14	11	11	11	11	11	0	0	0	0	0
3						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nres																				
FT																				
1	0	0	0	0	0	30	30	30	30	30	17	17	17	17	17	0	0	0	0	0
2						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PT																				
1	0	0	0	0	0	16	16	16	16	16	6	6	6	6	6	0	0	0	0	0
2						14	14	14	14	14	11	11	11	11	11	0	0	0	0	0
3						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nres																				
FT																				
1	0	0	0	0	0	30	30	30	30	30	17	17	17	17	17	0	0	0	0	0
2						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PT																				
1	0	0	0	0	0	16	16	16	16	16	6	6	6	6	6	0	0	0	0	0
2						14	14	14	14	14	11	11	11	11	11	0	0	0	0	0
3						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	20	22	22	22	22															
Res	10	12	12	12	12															
Nres	10	10	10	10	10															
FT	18	18	18	18	18															

PT	2	4	4	4	4
New	20	22	22	22	22
Res	10	12	12	12	12
Nres	10	10	10	10	10
Tmfr	0	0	0	0	0
Res	0	0	0	0	0
Nres	0	0	0	0	0

MS For Sci

	Total Credit Hours					Total New Crs Credit Hours					Total Spnt Crs Credit Hours					FTE				
	Yr.1	Yr.2	Yr.3	Yr.4	Yr.5	Yr.1	Yr.2	Yr.3	Yr.4	Yr.5	Yr.1	Yr.2	Yr.3	Yr.4	Yr.5	Yr.1	Yr.2	Yr.3	Yr.4	Yr.5
New HC																				
Res																				
FT	1	240	240	240	240	136	136	136	136	136	0	0	0	0	0					
	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
PT	1	32	32	32	32	12	12	12	12	12	0	0	0	0	0					
	2	0	28	28	28	0	22	22	22	22	0	0	0	0	0					
	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Nres																				
FT	1	300	300	300	300	170	170	170	170	170	0	0	0	0	0					
	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
PT	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Ttr HC																				
Res																				
FT	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
PT	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Nres																				
FT	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
PT	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Total	572	600	600	600	600	318	340	340	340	340	0	0	0	0	0	23.83	25.00	25.00	25.00	25.00
Res	272	300	300	300	300	148	170	170	170	170	0	0	0	0	0	11.33	12.50	12.50	12.50	12.50
Nres	300	300	300	300	300	170	170	170	170	170	0	0	0	0	0	12.50	12.50	12.50	12.50	12.50
FT	540	540	540	540	540	306	306	306	306	306	0	0	0	0	0	22.50	22.50	22.50	22.50	22.50
4-6 hrs enrichment																				

12/11/2006

rtb:enrichment

PT	32	60	60	60	60	60	12	34	34	34	34	0	0	0	0	0	0	1.33	2.50	2.50	2.50	2.50
New	572	600	600	600	600	600	318	340	340	340	340	0	0	0	0	0	0	23.83	25.00	25.00	25.00	25.00
Res	272	300	300	300	300	300	148	170	170	170	170	0	0	0	0	0	0	11.33	12.50	12.50	12.50	12.50
Nres	300	300	300	300	300	300	170	170	170	170	170	0	0	0	0	0	0	12.50	12.50	12.50	12.50	12.50
Tmfr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Res	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Nres	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00

12/11/2006

Appendix 2
Vitae of Full time Faculty in
Forensic and Investigative Sciences Program

Jay A. Siegel, Ph.D. – Director and Professor

Richard Li, Ph.D. – Assistant Professor in Forensic Biology

Gina Ammerman, M.S. - Lecturer

Jay A. Siegel

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PRESENT POSITION: Director of Forensic and Investigative Sciences Program
School of Science, IUPUI

EDUCATION: B.S. Chemistry, George Washington University, 1968
M.S. Chemistry, George Washington University, 1970
Ph.D. Chemistry, George Washington University, 1975

EXPERIENCE:

1968-69	Analytical Chemist, Byron Motion Pictures. In charge of all chemicals in motion picture processing lab
1970-75	Graduate Teaching Assistant - George Washington University
1975-77	Forensic Analytical Chemist - Virginia Bureau of Forensic Sciences. Analyzed controlled substances and trace evidence. Testified in court over 100 times as expert witness
1977-80	Associate Professor of Chemistry, Metropolitan State College, Denver, CO. Taught courses in analytical and forensic chemistry
1977-present	Consultant in forensic science. Testified a total of more 200 times as an expert witness in 12 states, federal and military courts.
1980-2005	Professor of Forensic Science and Director of the Forensic Science Program (2001-present), School of Criminal Justice, Michigan State University, East Lansing, MI. Coordinator of graduate programs in forensic science. Teaches forensic science and criminal justice courses and supervises research in forensic science.
2003-2004	Adjunct Professor, Michigan State University – Detroit College of Law
2004-present	Professor and Director, Forensic and Investigative Sciences Program, Indiana University, Purdue University Indianapolis

PROFESSIONAL AFFILIATIONS

American Academy of Forensic Sciences (Fellow). Chairman of Education Committee of Criminalistics Section, 1986-1996. Chair of poster sessions for 1996 national meeting, Nashville, TN.

President of Council of Forensic Science Educators, 1992-93 American Chemical Society

Southwestern Association of Forensic Sciences (Distinguished Member)

Midwestern Association of Forensic Scientists

The Forensic Science Society (England)

Member, Editorial Board, Journal of Forensic Sciences

Forensic Science Education Accreditation Commission

International Association for Identification

PUBLICATIONS

Journal Articles

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Siegel, J.A., Forensic Applications of Fluorescence Spectroscopy, Forensic Science Review, Dec. 1995

Siegel, J.A., Forensic Sciences at Michigan State University, MSU Alumni Magazine, Dec. 1994.

Siegel, J.A., Review of Scientific Evidence, 2nd Ed., by Gianelli, P., in Journal of Criminal Justice, 1995.

Siegel, J.A. Evidential Value of Textile Fiber - Transfer and Persistence, Forensic Science

Review, 9:81; 1997

Siegel, J.A. Collection and Chain of Evidence, In Encyclopedia of Forensic Science, Academic Press Limited, London, August, 2000

Siegel, J.A., Grim, D., Allison, J., Evaluation of Laser Desorption Mass Spectrometry and UV Accelerated Aging of Dyes on Paper as Tools for the Evaluation of a Questioned Document, J. Forensic Sci, July, 2002, Vol. 47, No. 4

Siegel, J.A., Grim, D., Allison, J., Does Ink Age Inside of a Pen Cartridge?, J. Forensic Sci, July 2002, Vol. 47, No. 4

Siegel, J.A. Dunn, J., Allison, J., Analysis of Ball Point Pen Inks by Desorption Mass Spectrometry, J. Forensic Sci, May 2003, Vol 48, No. 3

Siegel, J.A., Esslinger, K.J., Stallworth, S., Using STR Analysis to Detect Human DNA from Exploded Pipe Bomb Devices, J. Forensic Sci, May 2004, Vol. 49, No. 3

Siegel, J.A., Barnes, A.T., Nolan, J.A. and Kuk, R.A., Comparison of gasolines using gas chromatography-mass spectrometry and target ion response, September, 2004, Vol. 49, No. 5

Siegel, J.A., Accreditation of Undergraduate and Graduate Forensic Science Education Programs. Forensic Magazine, Winter, 2004, Vol. 1, No. 3

Books

Editor in Chief, Encyclopedia of Forensic Science, Academic Press Limited, London, August, 2000

Editor of Series: Forensic Drug Handbooks: Liang, R., Hallucinogens: A Forensic Drug Handbook, Academic Press, Boston, MA, April, 2003.

Editor of Series: Forensic Drug Handbooks: Smith, F., Ed., Handbook of Forensic Drug Analysis, Elsevier/Academic Press, Boston, MA, January, 2005.

Book Chapters

Siegel, J.A., Forensic Identification of Controlled Substances, in Forensic Science Handbook, Vol. II, R. Saferstein, Ed., Prentice-Hall, Englewood Cliffs, N.J., 1987.

Siegel, J.A., Three Dimensional Fluorescence in Forensic Chemistry, in Analytical Methods in Forensic Science, R. Liu, Ed. Ellis Horwood, London, 1991.

Siegel, J.A., Science and Law in the Courtroom: Two Ships Passing in the Night, Focus on Law Studies, American Bar Association, 1995

Siegel, J.A., Analysis of Textile Fibers, in Forensic Science, by Cyril Wecht, 1996.

Siegel, J.A. History and Development Expert Testimony, in More Chemistry and Crime, American Chemical Society, Washington, D.C., 1997.

Siegel, J.A. Forensic Chemistry, in Macmillian Encyclopedia of Chemistry, Macmillian Company, New York, 1997

Siegel, J.A. and Houck, M.M., Analysis of Textile Fibers, in Forensic Science, by Cyril Wecht, 2002

Siegel, J.A., Forensic Identification of Illicit Drugs, in Forensic Science Handbook, Vol. II, 2nd Ed., R. Saferstein, Ed., Prentice-Hall, Englewood Cliffs, N.J., 2003, in press

PRESENTATIONS

American Chemical Society, Middle Atlantic Regional Meeting, January 1973. "The Reaction of Bis(acetylacetonato) Nickel II: with Carbon disulfide."

Denver District Attorneys Association. May 1976. "The Analysis of Fire Residues."

Southwestern Association of Forensic Sciences. November 1979. "The Preparation of d-Pseudococaine from l- Cocaine."

Federation of Analytical Chemistry and Spectroscopy Societies. Sept. 1980. "Comparison of Criminalistics Curricula at U.S. Colleges and Universities."

Midwest Association of Criminal Justice Educators. October 1980. "The Future of Forensic Science in the Criminal Justice System."

Southwestern Association of Forensic Sciences. November 1980. "The Cocaine Isomers Defense."

The Denver District Attorneys Association. May 1980. "The Investigation of Arson."

Southwest Association of Forensic Sciences. November 1981. "Forensic Science Internship Programs."

American Academy of Forensic Sciences. February 1983. "The Analysis of Metronidazole in Human Serum." "Three-Dimensional Fluorescence of Petroleum Products."

Michigan Judicial Institute. 1981-84. Seventeen presentations on Forensic Science, physical evidence and Michigan Drunk Driving Laws. Programs given to judges, court reporters and court personnel.

American Academy of Forensic Sciences. February 1983. "The Use of Physical Evidence by Prosecutors." (With Frank Horvath).

National Association of Court Reporters. March 1983. "The Analysis of Scientific Evidence."

Michigan Court Stenographers Assoc. June 1983. "The Analysis of Controlled Substances."

Michigan Associations of Academically Talented Children. 1982-87. Four presentations to Michigan chapters on forensic science.

American Academy of Forensic Sciences. February 1984. "Three-Dimensional Fluorescence of Gasolines." "The Analysis of Human Seminal Fluid for Spermine and Sperminidine."

The Michigan Association of Laboratory Technologists. November 1985. "The Effects of the New Michigan Drunk Driving Laws on Clinical Laboratories."

South-Central Michigan Laboratorians Association. January 1985. "The Practice of Forensic Science in the Laboratory."

American Society of Crime Lab Directors. September 1985. "Forensic Science Education Today."

Midwestern Association of Forensic Scientists. October 1985. "Fluorescence of Petroleum Products." "Roundtable on Forensic Science Education."

American Academy of Forensic Sciences. February 1986. "Three-Dimensional Fluorescence of Motor Oils."

Joint Meeting of Regional Forensic Science Associations. Lexington, KY. October 1986. "The Analysis of Lubricants Used in Sexual Assault Crimes by Three-Dimensional Fluorescence." Paper won award as best paper by a new forensic scientist. (Gerrianne Fenzan).

American Academy of Forensic Sciences. February 1987. "Three Dimensional Fluorescence of Petroleum Products." "The Need for a Masters Program in Forensic Sciences-Survey of the Crime Lab Directors."

International Association of Forensic Sciences. August 1987. Chair and participant of panel of forensic science education.

American Academy of Forensic Sciences. February 1988. Chair of panel on Arson Analysis.

American Academy of Forensic Sciences. February 1989. "Three Dimensional Fluorescence Spectroscopy and Capillary Gas Chromatography of Midrange

Hydrocarbons."

American Academy of Forensic Sciences. February 1990. "Survey of Crime Lab Directors on Analysis of Gunshot Residues by SEM-EDX." (With D. DeGaetano).

Midwest Criminal Justice Association. October 1990. Chair and presenter on panel on "Future of Forensic Sciences."

Presentations on "Drugs in the Workplace" since 1987.

- Brotherhood of Electrical Workers of Michigan

- Michigan Firefighters Association (4 presentations)

- International Association of Firefighters

- Capitol Area Substance Abuse Commission

- Industrial Relations Research Association Kalamazoo Area Substance Abuse Commission

- Michigan Employment Relations Commission

- MSU School of Labor and Industrial Relations Alumni Assoc.

- Michigan Association of Fire Chiefs

American Academy of Forensic Sciences. February 1991. "Comparison of Three Methods of Analysis of Gunshot Residues by SEM-EDX." (With D. DeGaetano).

Great Lakes Chemistry Conference, March 1992. Keynote speaker. "Careers in Forensic Chemistry."

Gordon Research Conference, August 1993. Invited speaker. "Applications of Analytical Chemistry to Forensic Science."

Visiting Scientist, Dow Chemical Corp., Midland MI, October, 1993.

American Academy of Forensic Sciences, February 1994. "Forensic Science in the Adversary System."

Alma College Career Fair, March 1994. Invited speaker. "Forensic Science Careers."

"Incorporating Forensic Science into High School and College Science Courses", Mid-Michigan Section, American Chemical Society meeting, Ann Arbor, MI, May 1994.

"Investigation of Violent Death", Oakland County, MI Bar Association Youth Law Day. Invited speaker. March 1995-2003.

"Update in Forensic Science", SCH, Inc. Executive Management seminar, East Lansing, MI. April 1994.

"Analysis of DNA Evidence", East Lansing, MI chapter of Kiwanis Club, June 1994

Keynote speaker, Southwest Michigan Chapter, American Chemical Society, Kalamazoo, MI. Sept 1994.

"The Analysis of Petroleum Products by Three Dimensional Fluorescence Spectroscopy",

International Forensic Science Conference, Taipei, Taiwan, ROC. November 1994.

"Forensic Science Education in the 1990s", Department of Chemistry and Biochemistry, University of Windsor, Windsor, Ontario, Canada. March 1995.

"Analysis of DNA Evidence in Court", Michigan Clinical Laboratory Association, East Lansing, MI. April 1995.

"Forensic Chemistry", Central Indiana Society for Applied Spectroscopy. Feb 1996.

"Careers in Forensic Chemistry", Central Michigan University, invited speaker. March 1996.

"The Status of Forensic Science in the US", New South Wales, AU Forensic Science Society, Sydney, AU. May 1996.

"Scientific Evidence Issues", Michigan Defense Attorneys Association, Traverse City, MI. Sept 1996.

"Admissibility of Scientific Evidence - Where are we now?" invited plenary speaker, Midwest Association of Forensic Sciences, October 1996

"Update in Forensic Science", SCH, Inc. Executive Management seminar, December, 1996. Lansing, MI.

American Academy of Forensic Sciences. February 1997. "Use of Scientific Evidence by Prosecutors", New York.

"Forensic Chemistry", invited speaker at Department of Chemistry, Ohio Wesleyan University, Delaware, Ohio, March, 1997

"Forensic Science Update and Case Preparation", invited speaker by SEAK, Inc., Cape Cod, MA, June 1997.

"Investigation of Violent Death", Ohio Continuing Legal Education Inc., Columbus, OH, Dec. 1997, 1999, 2001.

"The Status of Forensic Science in the US", New South Wales, AU Forensic Science Society, Sydney, AU, March, 1998

"Forensic Science Research Issues", New South Wales Drug Laboratory, Sydney, AU, April, 1998

American Academy of Forensic Sciences. February 1999. "Transfer and Persistence of Fibers - A Mass Transfer Study". (With Max Houck)

American Academy of Forensic Sciences. February 2000. "Analysis of Inks using HPLC and FTIR".

A series of 5 seminars on scientific evidence, presented to the Department of Chemistry, Physics and Earth Science, Flinders University, Adelaide, AU, May and June, 2000

A series of 2 seminars on scientific evidence, presented to the staff of the South Australia Crime Lab, Adelaide, AU, June, 2000

"Update on Forensic Science". Michigan Defense Attorneys Association, Traverse City, MI, Oct. 2000.

Guest lecturer, Okemos High School, May 7, 2002, Forensic Science

American Academy of Forensic Sciences, Feb. 2002, D. Grim and J. Siegel, "Analysis of Inks by Laser Desorption Mass Spectrometry"

American Academy of Forensic Sciences, Feb. 2003

C. Stark and J. Siegel, "Analysis of Lipsticks by ATR/FTIR"

S. Walbridge and J. Siegel, "Transfer and Persistence of Fibers"

K. Esslinger and J. Siegel, "Recovery of DNA from Exploded Pipe Bombs"

American Chemical Society, Midwest Regional Meeting, Indianapolis, IN, June, 2004

J. Siegel, "Analysis of Ink Dyes by Laser Desorption"

J. Siegel, "Accreditation of University Forensic Science Programs"

GRANTS

National Science Foundation. Grants for Scientific Education. 1980. Development of a course in forensic science for nonscience majors. \$300. Associate investigator.

National Science Foundation. Science Faculty Development Grant. 1981-83. Research in forensic serology and toxicology. \$53,000. Principal investigator.

Michigan State University. All-University Research Initiation Grants. 1981-82. Use of physical evidence by prosecutors. \$7500. Co-principal investigator with Frank Horvath.

Office of Criminal Justice, State of Michigan. Grants for scientific equipment for the MSU forensic science laboratory. 1982-83. \$95,000. Principal investigator.

Michigan State Police, Office of Highway Safety Planning. 1984. Study of patterns of injury in motor vehicle fatalities. \$5000. Principal investigator.

Perkin-Elmer Corporation. Corporate Donation Program. 1986.

Spectrofluorimeter to support forensic chemistry research. \$37,000.

Midwest Association of Forensic Scientists. Research Grant program. 1988. Analysis of Midrange Hydrocarbons by Three-Dimensional Fluorescence. \$2200. Principal investigator.

Michigan State University. All-University Research Initiation Grants. 1988-89. Study of gunshot residues by SEM-EDX. \$2600. Co-Principal investigator.

USAID - Office of Democratic Initiatives. 1989-90. Education project for El Salvadorian students for training in forensic science. \$68,000. Principal investigator.

Michigan State University. IT-CDG grant program. 1990-91. Adding high technology to forensic science education. \$1000 plus 100 hours of video production time.
Hewlett-Packard Corp. Corporate donation program. 1992. Gas-chromatograph/mass spectrometer, \$62,000. Joint with the department of chemistry.

Michigan State University, All-University Research Initiation Grants. Use of Scientific Evidence by Prosecutors. 1995. \$7500.

Nicolet Corp. University donation program. 1992. Data station and IR source for FTIR. \$21,000.

Michigan State Police. Evaluation of Drunk Driving Training Programs. 1996. \$41,000

Michigan State University. All-University Outreach Grant program. Forensic Science as problem-solving tool for high schoolteachers. 1996. \$7500.

National Institute of Justice. Analysis of Inks using Laser Desorption Mass Spectrometry, \$240,000. Co-PI. 2001-2004.

AWARDS AND HONORS

Outstanding Graduate Assistant. George Washington University, Department of Chemistry. 1974.

American Chemical Society Congressional Fellow. 1988-89

Distinguished Member, Southwestern Association of Forensic Sciences.

Chief US Delegate to International Forensic Science Conference, Taipei, Taiwan, ROC, November, 1994

Visiting Professor, Criminal Police College of China. 1993.

Visiting Professor - Department of Chemistry, Materials and Forensic Science, University of Technology, Sydney, Australia. January to June, 1998

Visiting Professor - School of Chemistry, Physics and Earth Science, Flinders University, Adelaide, AU, May-June, 2000

Member, External Advisory Committee. Deakin University Forensic Science Course, Geelong, Victoria, Australia, 2003-present

Paul Kirk Award winner. Criminalistics Section, American Academy of Forensic Sciences, Feb. 22, 2005.

CONSULTING

Denver Police Department. 1979-80. Casework, internships, personnel.

Denver Districts Attorneys Office. 1979-80. Casework and scientific evidence.

Colorado Bureau of Investigation. 1979-80. Analytical techniques, internships and personnel.

Denver Public Defenders Office. 1979-80. Casework and scientific evidence. Wisconsin State Police. 1987. Casework.

Michigan State Police. 1987-present. Casework, internships, personnel. U.S. Bureau of Alcohol, Tobacco and Firearms. 1989. Casework.

Cameron Parish, Louisiana Sheriffs Department. 1989. Casework.

Over 100 cases with numerous law firms, insurance companies, and traffic accident reconstructors. 1977-present. Analysis of evidence, testimony, depositions, drug testing protocols. Testified as expert witness in over 200 cases in 12 states, Federal and Military courts.

University of Wisconsin at Milwaukee. Invited consultant on starting a forensic science program. March, 1997.

Consultant in Forensic Chemistry, Speckin Forensic Laboratories. 1996-present.

SHORT COURSES AND SEMINARS TAUGHT

Denver Poisonlabs seminar on forensic toxicology. 1977.

University of Denver Law Center. Continuing Legal Education Division. Course in Forensic Science for Attorneys. 1979.

Michigan Judicial Institute. Approximately 30 short courses and seminars to judges and court personnel on various forensic science topics. 1981-93.

Michigan State University, Lifelong Education Programs. Approximately 20 programs in Criminal Justice and Forensic Science to Criminal Justice professionals. 1980-present. Visiting Lecturer, Criminal Police College of China, Shenyang, PRC, July 1992.

Michigan Judicial Institute, Judges Seminar in Scientific Evidence, Troy, MI., May, 1993.

American Bar Association. Continuing Education Program for Appellate Court Judges, Workshop on Admissibility of Scientific Evidence. Sun Valley, ID, July, 1994.

Five State Judges Association. Continuing Education Seminar for Judges. Workshop on Admissibility of Scientific Evidence. Rapid City, SD, July, 1995.

American Bar Association. Continuing Education Program for Appellate Court Judges, Workshop on Admissibility of Scientific Evidence. Jackson Hole, WY, July, 1996.

Michigan State University, High school teachers enrichment program. 5 hour short course in teaching forensic science in high school. March, 1997.

SHORT COURSES AND SEMINARS TAKEN

Drug Enforcement Administration course in forensic drug analysis. 1977. McCrone Institute course in forensic microscopy. 1980.

FBI International Conference in Forensic Toxicology.

1984. DNA typing by Polymerase Chain Reaction, 1994.

McCrone Institute course on building materials analysis, Chicago, IL, October 16, 17, 2000

One day course on analysis of Inks, US Department of Internal Revenue, Chicago, IL, October 18, 2000

Paint analysis, Midwest Association of Forensic Scientists, Lansing, MI, May 5-9, 2003

MAJOR MEDIA APPEARANCES

Expert witness for the defense, State of Florida v. William Kennedy Smith, December, 1993, nationally televised

"Eye to Eye with Connie Chung", Sept. 1994, Use of DNA evidence in court and role of financial resources in ability to offer defense in criminal justice system

"ABC Evening News", April, 1995. Tagging Explosives

"Science Friday-Talk of the Nation", National Public Radio, Forensic Science, April, 1996.

"CBS Early Morning", October 2002, DC Sniper attacks

"CBS Early Morning", October 2002, The forensic science program at MSU

"Inside Indiana Business", August, 2004, The forensic science program at IUPUI

Richard C. Li Ph.D.

723 W. Michigan Street SL326
Indiana University-Purdue University ♦ Indianapolis, IN 46202 ♦ 317-278-0777 ♦ RiLi@iupui.edu

EDUCATION

University of Wisconsin, Madison, WI

Ph.D., Molecular Biology, 1992

M.S., Physiology, 1988

University of New Haven, West Haven, CT

M.S., Forensic Science, 2001.

Shanghai University of Chinese Medicine, Shanghai, China

B.M., Pharmacy, 1982.

PROFESSIONAL EXPERIENCE

Indiana University-Purdue University, Indianapolis, IN

Department of Biology

Forensic and Investigative Sciences Program

Assistant Professor, 2005 – to date.

Sam Houston State University, Huntsville, TX

Forensic Science Program, College of Criminal Justice

Assistant Professor, 2001 - 2005.

Office of Chief Medical Examiner, New York, NY

Department of Forensic Biology

Criminalist and consultant, 9/1999 – 7/2001.

Yale University, New Have, CT

Associate Research Scientist, 1998 - 2000.

Cornell University Medical College, New York, NY

National Kidney Foundation Fellow and Postdoctoral Fellow, 1993 - 1997

RECENT TEACHING EXPERIENCE

FIS402 Forensic Biology: DNA analysis (undergraduate level)

BIO556 Human Physiology (graduate level)

GRANT AWARDS

Li RC. Application of proteinases for DNA isolation of bone specimens. *National Institute of Justice*, 2006-2008, \$15,000.

Li RC. Application of solid phase microextraction methods for forensic toxicological analysis of postmortem and decomposed samples. *National Institute of Justice*, 2003-2006, \$58,000.

Li RC. Developing a high-yield DNA isolation method for compromised skeletal samples. *National Institute of Justice*, 2003-2005, \$25,000.

Li RC. Developing training courses for forensic DNA testing. *State of Texas*, 2004, \$15,000.

PEER-REVIEWED JOURNAL ARTICLES

Wise J, Danielson T, Mozayani A, Bayles A, **Li R** (Submitted) Analysis of amphetamines in postmortem matrices using in-matrix alkylchloroformate derivatization and automated HS-SPME followed by GC-MS. *J. Forensic Sci.*

Hopenwasser J, Mozayani A, Danielson TJ, Harbin, BJ, Narula HS, Posey DH, Shrode PW, Wilson SK, **Li RC**, Sanchez LA (2004) Postmortem distribution of the novel antipsychotic drug quetiapine. *J. Anal. Toxicol.* **28**:(4)264-7.

Jeff W, **Li RC** (2003) The future of DNA evidence. *Crime & Justice International*, **19**:(70)31-2.

Li RC, Harris HA (2003) Using adhesive tape for collection of evidence for forensic DNA analysis. *J. Forensic Sci.* **48**:(6)1318-21.

Sharif KA, **Li C**, Gudas LJ (2001) Cis-acting DNA regulatory elements, including the retinoic acid response element, are required for tissue specific laminin B1 promoter/*lacZ* expression in transgenic mice. *Mech. Dev.* **103**:13-25.

Li C, Whyte DA, Thomson RB, Nix SL, Raze J, Karp SL, Aronson PS, Igarashi P (1999) Ksp-cadherin gene promoter. I. Characterization and renal epithelial cell-specific activity. *J. Am. Physiol.* **277**: f587-598.

Li C, Gudas LJ (1997) Sequences 5' of the basement membrane laminin B1 chain gene (*LAMB1*) direct the expression of *lacZ* during development of the mouse testis and ovary. *Differentiation*. **63**:1203-7.

Shen J, **Li C**, Gudas LJ (1997) Regulation of the laminin b1 (*LAMB1*), *RARB*, and *BMP-2* genes in mutant F9 teratocarcinoma cell lines partially deficient in cAMP-dependent protein kinase activity. *Cell Growth Differ.* **8**:1297-1304.

Li C, Gudas LJ (1996) Murine laminin B1 gene regulation during the retinoic acid and dibutyl cyclic AMP-induced differentiation of embryonic F9 teratocarcinoma stem cells. *J. Biol. Chem.* **271**:6810-6818.

Li C, Louise CJ, Shi W, Adler J (1993) Adverse conditions which cause lack of flagella in *Escherichia coli*. *J. Bacteriol.* **175**:2229-2235.

Li C, Adler J (1993) *Escherichia coli* shows two types of behavioral response to osmotic upshift. *J. Bacteriol.* **175**:2564-2567.

Shi W, **Li C**, Louise CJ, Adler J (1993) Mechanism of adverse conditions causing lack of flagella in *Escherichia coli*. *J. Bacteriol.* **175**:2236-2240.

Li C, Boileau AJ, Kung C, Adler J (1988) Osmotaxis in *Escherichia coli*. *Proc. Natl. Acad. Sci. USA* **85**:9451-9455.

Adler J, **Li C**, Boileau AJ, Qi YL, Kung C (1988) Osmotaxis in *Escherichia coli*. *Cold Spring Harbor Symp. Quant. Biol.* **53**:19-22.

Wang DY, Li C, Pong DW (1984) Effects of Astragalus polysaccharide on ribonuclease and inhibitor of alkaline RNase. *Acta Biochimica et Biophysica Sinica* **16**:285-290.

BOOK CHAPTERS

Li RC, Harris HA (2005) The application of adhesive tape for collection of evidence for forensic DNA analysis. In *Trends in DNA Fingerprinting Research*. Nova Science Publishers Inc., Hauppauge, NY, 193-200.

Draper H, Li RC (2004) Drug testing of employees. In *Encyclopedia of law enforcement*. Thousand Oaks, CA: Sage, 633-5.

Santos N, Li RC (2004) Encryption. In *Encyclopedia of law enforcement*. Thousand Oaks, CA:Sage, 648-9.

ABSTRACTS

Wise J, Danielson T, Mozayani A, Bayles A, Li R (Accepted) Analysis of amphetamines in postmortem matrices using in-matrix alkylchloroformate derivatization and automated HS-SPME followed by GC-MS. *Proc Am Acad Forensic Sci*.

Li, R.C., Chapman, S. Thompson, M., & Schwarz, B.S. (2005) Developing a simple method to process compromised bone fragment for forensic DNA isolation. *Proc. Am. Acad. Forensic Sci.*, **11**:34.

Simons, K.D., Mosayani, A., Danielson, T., Narula, H.S., Li, R.C. & Sanchez, L. (2004) The presence and distribution of the cocaine like stimulant fencamfamine in a postmortem case. *Proc. Am. Acad. Forensic Sci.*, **10**:372.

Li, R.C. (2002) Application of lysis buffer in DNA isolation from bone for forensic typing. *Proc. Am. Acad. Forensic Sci.*, **8**:26.

Li, R.C., Harris, H. & Shaler, R. (2001) Using adhesive tape for noninvasive collection of evidence for forensic DNA typing. *Proc. Am. Acad. Forensic Sci.*, **7**:34.

Li C, Gudas LJ (1996) Sequences 5' of the basement membrane laminin B1 gene direct the expression of B-galactosidase during mouse kidney. Cold Spring Harbor Mouse Genetics Meeting Abstract. 136.

Li C, Gudas LJ (1996) Murine laminin B1 gene regulation during the retinoic acid induced differentiation of embryonic F9 teratocarcinoma stem cells. *Keystone Symposium J2*.

Gudas, L.J., Chen, S., Langston, A., Li, C. & Thompson, J. (1996) Retinoids: Signals for cell growth and differentiation. *Keystone symposium E2*.

Li, C., Yu, K. & Gudas, L.J. (1994) Targeted disruption of a retinoic acid-regulated zinc finger gene REX-1 (Zfp-42) in embryonic stem cells. *BSCB& BSDB Joint Meeting*.

Li, C., Louise, C. & Adler, J. (1991) The effects of growth in high ionic strength media on motility and chemotaxis of *Escherichia coli*. *Biophys. J.* **59**:22a.

Li, C., Martinac, B. Kung, C. & Adler, J. (1990) Mutant of *Escherichia coli* with altered pressure and drug sensitivity of the mechanosensitive ion channel. *Soc. Neurosci. Abstr.* **116**:280.10.

Adler, J., Boileau, A.J., Buechner, M., Delcour, A. H., **Li**, C., Sager, B. & Shi, W. (1988) New kinds of behavior of *Escherichia coli*. *Cold Spring Harbor Symp. Quant. Biol.* 53.

Bittar, E.E., Ueno, K. & **Li**, C. (1986) Phorbol ester-induced stimulation of the ouabain-insensitive sodium efflux in barnacle muscle fibers. *Biophys. J.* **49**:553a.

Gina Ammerman
gammerma@iupui.edu
Indiana University Purdue University Indianapolis
Department of Chemistry and Chemical Biology

402 N. Blackford St. LD 326

Indianapolis, IN 46202

(317) 274-8930

Current Position:

**Lecturer, Forensic and Investigative Sciences Program, Indiana University
Purdue University Indianapolis**

Responsibilities:

- Lecture on chemistry related topics, such as general chemistry, instrumentation of chemistry and forensic chemistry
- Operate and maintain research forensic and analytical chemistry laboratory

Education:

Indiana University Purdue University Indianapolis	Indianapolis,
IN	
<i>Master of Science</i>	December
2006	
<i>Major: Analytical Chemistry</i>	
<i>GPA: 3.8/4.0</i>	
Ball State University	Muncie, IN
<i>Bachelor of Science</i>	May 2004
<i>Major: Chemistry</i>	
<i>Minor: Mathematics</i>	
<i>GPA: 3.4/4.0</i>	

Related Experience:

Eli Lilly and Company	Greenfield,
IN	
<i>Biomarker Co-op Student</i>	January
2005-Present	
<ul style="list-style-type: none">• Method validation for development and implemented assays used for quantification of compounds and/or biomarkers used to determine pharmacokinetic and drug disposition parameters• Write or modify departmental standard operational procedures, methods, procedures, and guidelines	

- Evaluate and contribute to the evaluation of new technologies, techniques, study designs and equipment, including but not limited to LC/MS/MS and GC/MS/MS

Indiana University Purdue University Indianapolis
IN

Indianapolis,

Graduate Student

August 2004-

Present

- Analysis of pigmented inks via pyrolysis gas chromatography mass spectrometry
- Teacher's assistant in forensic chemistry laboratory and general chemistry laboratory
- Organize and maintain forensic science laboratory including instrument maintenance

Eli Lilly and Company

Indianapolis,

IN

Product Development Summer Intern

May 2004-

August 2004

- Developed a method to analyze binary blends on UV-Vis and Atomic Absorption
- Analyzed binary mixtures on HPLC to compare with NIR on-line blending
- Used PLS modeling to determine linearity and endpoint of chemical data

Eli Lilly and Company

Indianapolis,

IN

ADME Summer Intern

May 2003-

August 2003

- Developed aminopeptidase activity assays for 96-well plates
- Used Gemini Spectra Max Fluorescence

Ball State University

Muncie, IN

Stockroom Assistant
2004

October 2001-May

- Prepared labs for general chemistry classes
- Maintained stockroom appearance and laboratory activity

Publications:

P. Method, J. Siegel, and **G. Londino**. "Comparison of blood and duplicate breath testing for ethanol in Indiana" *Journal of the Alcohol Testing Alliance*, Volume 15, Issue 1: 17-21 (2006).

G. Londino and C. Waung. “How to ask sensitive questions using statistics: a case study on academic dishonesty”. *Ball State University Undergraduate Math Exchange*, Volume 2, Issue 1: 18-21 (2004).

Abstract / Presentations:

G. Londino and J. Siegel. Instrumental analysis of pigmented inks. Presentation at: American Academic of Forensic Science conference; 24 February 2006; Seattle, Washington.

J. Siegel and **G. Londino**. Instrumental analysis of pigmented inks. Grantee Poster at: American Academic of Forensic Science conference; 21 February 2006; Seattle, Washington.

J. Siegel, K. Jaunman, and **G. Londino**. The analysis of cosmetic glitter. . Presentation at: American Academic of Forensic Science conference; 25 February 2006; Seattle, Washington.

G. Londino, L. King, H. Brown, A. Garrett, F. Rhea, K. VanDerKamp, and D. Reed. Evaluation of analytical capabilities of the Zeiss® on-line near-infrared detector. Poster presented at: Eli Lilly and Company; 30 July 2004; Indianapolis, Indiana.

G. Londino. Development of an assay for aminopeptidase activity in 96 well plates. Poster presented at: Eli Lilly and Company; 1 August 2003; Indianapolis, Indiana.

References available upon request

Appendix 3

Letters of Support

J.E. Littlejohn, Major – Indiana State Police
Herbert L. Blitzler, President – Institute for Forensic Imaging
Scott C. Mellinger, Former Executive Director – Indiana Law Enforcement Training Board
Rebecca S. McClure, Former Assistant Executive Director and now Judge, Superior Court,
Boone County
Peter F. Method, Ph.D., Acting Director – Indiana State Department of Toxicology
Michael M. Medler, Director – Indianapolis-Marion County Forensic Services Agency
Sonia J. Leerkamp, Prosecuting Attorney – Hamilton County
Roger Park, Consultant in Engineering – Indianapolis, IN
Dennis L. Rice, Sheriff – Montgomery County
Deborah J. Daniels, Attorney at law – Krieg-Devault
Grant W. Hawkins, Judge – Marion Superior Court
Greg Lindsey, Associate Dean – School of Public and Environmental Affairs, IUPUI
Frank Schultz, Chair – Department of Chemistry and Chemical Biology, IUPUI
R. Douglas Lees, Chair – Department of Biology, IUPUI
Michael Vasco, Chair – Department of Pharmacology and Toxicology, IU School of Medicine

INSTITUTE FOR FORENSIC IMAGING

November 28, 2005

Dr. Jay Siegel
Director, Forensic & Investigative Sciences Program
IUPUI, School of Science, LD 326
402 N. Blackford St.
Indianapolis, IN 46202

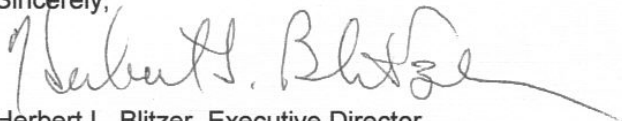
Dear Dr. Siegel:

Earlier this fall, The Police Chief, the magazine of the International Association of Chiefs of Police carried a series of articles on how college degrees are experiencing greater demand in the field of law enforcement. Most agencies are supporting bachelor's degrees for police officers, and some even requiring them. As for promotions to command positions, and specialty functions such as forensics, they are demanding at least a bachelor's degree and the trend is to expect those people to go on to an advanced degree. More and more, agencies will support master's level programs both financially and with time to attend class. Similarly, the Association of Crime Laboratory Directors, in it's guidelines for accreditation have added more advanced degree requirements and recommendations for positions in America's laboratories. Seeing trends like these taking hold makes me a strong supporter of IUPUI developing a Master's Degree in Forensic Sciences to compliment the current Bachelor's Degree.

In addition to supporting the creation of a MS degree in Indiana, I feel that IUPUI is an excellent location for the program. Clearly there will be opportunities for synergy between the two programs (BS & MS), and the urban environment is highly appropriate to both programs. Furthermore, the proximity to the professional Schools of Medicine, Dentistry and Law will also be an excellent asset to such a program.

I hope your initiative moves ahead rapidly, and if there is any way in which we can help, please don't hesitate to call.

Sincerely,



Herbert L. Blitzer, Executive Director

338 SOUTH ARLINGTON AVENUE, SUITE 111, INDIANAPOLIS, IN 46219
TELEPHONE: (317) 356-0245 FAX: (317) 356-0227
EMAIL: hblitzer@ifi-indy.org

KRIEG · DEVAULT LLP
ATTORNEYS AT LAW

December 21, 2005

Deborah J. Daniels
Direct Dial: (317) 238-6253
E-mail: ddaniels@kdlegal.com

Jay A. Siegel, Ph.D.
Director-Forensic and Investigative Sciences Program
IUPUI – School of Science, LD 326
402 N. Blackford Street
Indianapolis, IN 46202

Dear Dr. Siegel:

I write this letter in strong support of the proposal which you have submitted for a Master of Science in Forensic Science program, to be offered by Purdue University, Indiana-Purdue University at Indianapolis.

By way of background, I have a lengthy history of working in criminal prosecution at both the local and federal levels, and most recently served as Assistant Attorney General for the Office of Justice Programs, United States Department of Justice (2001-2005). The Office of Justice Programs is the primary research and grant-making arm of the Department of Justice, and in my capacity there, I had occasion both to observe and participate in several advances in the nation's capacity to use forensic science to solve criminal cases, convict the guilty and exonerate the innocent. One of our greatest concerns, in particular as we developed a Presidential DNA Initiative that proposed to commit \$1 billion to the use of DNA by law enforcement at all levels across the country, was the dearth of formal study programs in our universities in the area of forensic science. This resulted in a shortage of capable forensic scientists to staff the laboratories springing up around the country. This is not a trend that will dissipate over time; in fact, it is my belief that the need for trained personnel to do this type of work will only expand as the criminal justice system expands its use of forensic science to solve crimes.

I fully agree with your suggestion that well-trained forensic scientists are in great demand as a result of this trend, and that Indiana, as well as other states throughout the country, will continue to need more of such individuals in future years. I strongly support your proposal, and would invite those considering it to contact me if I may answer any questions relating to the need of our society for programs such as this.

Very truly yours,



Deborah J. Daniels

KD_IM-665872_1.DOC



MARION SUPERIOR COURT
Criminal Division Room Five
GRANT W. HAWKINS, JUDGE

200 EAST WASHINGTON STREET • W305 CITY-COUNTY BUILDING
INDIANAPOLIS, INDIANA 46204-3307

(317) 327-4811 • FAX (317) 327-4611



December 9, 2005

Indiana Commission on Higher Education

RE: Master of Science in Forensic Science Program

Dear Commission Members:

We who serve the public have always faced certain challenges. I write because you have the ability to lower, or remove, one barrier to the swift and fair administration of criminal justice. I have recently learned that the undergraduate Forensic Science Program offered at IUPUI may, with your permission, be used as a springboard for a Master's Program in Forensic Science. I am excited at the prospect of such a program and encourage you to approve the proposal because, as a Judge in a criminal court where major felony cases are heard, I am aware of the acute need for more forensic scientists.

Whether a result of the natural evolution of science or the popularity of TV-based police procedurals, forensic evidence is becoming more and more a part of the criminal investigative and trial process. The dearth of available scientists delays our criminal justice system because we have to wait in a long line for test results and then we have to compete for the availability of the scientist as a witness. The idea that more scientists might be available in the next few years is thrilling because it translates into the possibility of a more efficient criminal justice system and a less staggeringly overcrowded Marion County Jail.

Because of the popularity of the science-based crime shows, jurors have heightened expectations. Meeting those expectations results in a more fair trial process. Scientific evidence already exonerates innocent defendants and inclines guilty defendants to plead guilty. Imagine the increased efficiency if we had more scientists available to aid in the truth-finding process. A forensic scientist with a Master's Degree is both a more highly credentialed witness and a source of instruction for additional university level degree candidates.

Thank you for your time and your kind attention.

Sincerely,

A handwritten signature in dark ink, appearing to read "G. W. Hawkins".

Grant W. Hawkins

GWH/dsb



HAMILTON COUNTY PROSECUTOR'S OFFICE

SONIA J. LEERKAMP • PROSECUTING ATTORNEY

BARBARA J. TRATHEN
CHIEF TRIAL DEPUTY

JEFFREY D. WEHMUELLER
ADMINISTRATIVE CHIEF DEPUTY

November 22, 2005

Jay A. Siegel, Ph.D.
Director-Forensic and Investigative Sciences Program
IUPUI School of Science, LD326
402 N. Blackford St.
Indianapolis, IN 46202

D. LEE BUCKINGHAM, II
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SHARI L. BLESSING

GARY C. LAMEY
ROBIN HODAPP-GILLMAN
JUVENILE DIVISION

ROGER W. KUBA
INVESTIGATOR

Re: Proposal for Masters Degree Program

Dear Jay:

Thank you for giving me the opportunity to review your proposal for a Masters Degree Program in Forensic Sciences.

This proposal appears to me to be very comprehensive and well thought-out. The connection/partnership with the law school was particularly intriguing and compelling to me. Lawyers from so many disciplines are called upon to use various forensic sciences in their work, yet there is very little preparation for that aspect at the law school level. That partnership should strengthen both the lawyers and the scientists, as well as making the course offering unique.

I wish you the best in having this curriculum approved.

Sincerely,

A handwritten signature in cursive script, appearing to read "Sonia J. Leerkamp".
Sonia J. Leerkamp
Prosecuting Attorney

ONE HAMILTON COUNTY SQUARE, SUITE 134
NOBLESVILLE, INDIANA 46060
(317) 776-8595 • FAX (317) 776-8469

PRE-TRIAL DIVERSION 776-8415
DEFERRAL 770-8860

BAD CHECK PROGRAM 774-2513

INDIANA UNIVERSITY
PURDUE UNIVERSITY
INDIANAPOLIS

December 4, 2006

Dr. Jay Siegel, Director
Forensic and Investigative Sciences Program
IUPUI

SCHOOL OF SCIENCE



Dear Dr. Siegel,

I have reviewed your draft proposal seeking to establish a Master of Science degree program in Forensic and Investigative Sciences (FIS) at IUPUI. From my perspective what you have proposed is a natural extension of the B. S. program and is forward looking in that it addresses the future need in this area.

The program as proposed poses no overlap with the M. S. programs in the Department of Biology. In fact, I can see where courses in Biology might be attractive and valuable to students in your program. In addition, courses developed for the M. S. in FIS might offer interesting electives for students in some of our graduate programs.

If I can be of further assistance, please let me know.

Sincerely,

N. Douglas Lees
Professor & Chair

OFFICE OF THE CHAIRMAN

DEPARTMENT OF BIOLOGY

Science & Engineering
723 West Michigan Street
Indianapolis, Indiana
46202-5132

317-274-0575
Fax: 317-274-2846

INDIANA UNIVERSITY

April 10, 2006



Jay Siegel, Ph.D.
Professor and Director
Forensic and Investigative Sciences Program
School of Science, LD 326
402 N. Blackford Street
Indianapolis, IN 46202

SCHOOL OF PUBLIC
AND ENVIRONMENTAL
AFFAIRS

Dear Jay,

I am writing this letter in support of the Master of Science in Forensic Science degree that is being proposed by the IUPUI School of Science. This degree appears to be the natural progression from the undergraduate degree in forensics and investigative science that is now in its third year at IUPUI. As a partner in the multidisciplinary undergraduate forensics degree, SPEA has always been committed to enhancing the forensic science community of Indiana.

We have long been aware of the serious need for forensic scientists to man the laboratories of this state. With the undergraduate degree in place, strong partnerships have been formed with the external community of law enforcement, health professionals, legal professionals and laboratory personnel. The undergraduate degree is very likely to be accredited as soon as it meets the time-since-initiated criteria. The newly proposed Master of Science in forensic science is even more focused on the significant scientific skills needed by today's forensic scientists.

Since graduates with a Master's degree are also more likely to be put in a management position, SPEA is hoping to provide a course for the degree that will meet the public management needs of these professionals—teamwork, communication skills, problem-solving in a public environment, among others. We believe that graduates who have not only scientific background but also a legal background and a public management background, will be well-suited to becoming ethical, efficient forensic scientists.

The program requirements for admission to this degree are rigorous and the proposed curriculum appears to be top-notch, suited for both traditional and non-traditional students and of great need in the State of Indiana. This new degree has SPEA's support, and we hope to be a strong partner in promotion and delivery of it.

OFFICE OF THE DEAN

801 West Michigan Street
Business/SPEA Building, 3025
Indianapolis, Indiana
46202-5152

317-274-2016
Fax: 317-274-5153

Please contact me if you have questions or require additional information. On behalf of SPEA, I will be pleased to work to help ensure this degree is established.

Sincerely,

A handwritten signature in black ink that reads "Greg Lindsey".
Greg Lindsey
Associate Dean

*Located on the campus of
Indiana University
Purdue University
Indianapolis*

CC: Carl Cowan
Kenna Quinet
Astrid Merget
Kurt Zorn

STATE OF INDIANA

INDIANA STATE POLICE
INDIANA GOVERNMENT CENTER NORTH
100 NORTH SENATE AVENUE
INDIANAPOLIS, INDIANA 46204-2259
www.state.in.us/isp

November 29, 2005

Dr. Jay Siegel
Director-Forensic and Investigative Sciences Program
IUPUI School of Science, LD326
402 North Blackford Street
Indianapolis, IN 46202

Dear Dr. Siegel,

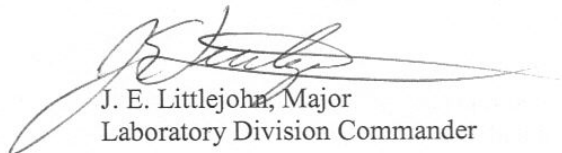
The Indiana State Police Laboratory strongly supports the establishment of a Master of Science in Forensic Science and Investigative Sciences at IUPUI.

Graduates of this program will fill future needs in forensic laboratories as scientists, quality control analysis, and will help provide the future leaders in forensics in Indiana. Some positions of authority, notably in DNA, require a master's degree; therefore, graduates should compete well for future laboratory positions.

Students in this program, working in cooperation with the Laboratory Division of the Indiana State Police and other forensic laboratories, could conduct and participate in research projects that would provide valuable information to the Criminal Justice Community. Using students in this manner would better utilize limited forensic laboratory personnel who are needed to work criminal cases.

The Indiana State Police Laboratory believes this program, if instituted, will play a vital role in maintaining forensic services at the highest level of quality in the State of Indiana.

Sincerely,


J. E. Littlejohn, Major
Laboratory Division Commander

JEL:mkp

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INDIANA PROSECUTING ATTORNEYS COUNCIL

302 W. Washington Street, Room E-205

Indianapolis, IN 46204-2767

www.in.gov/ipac



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Fax: (317) 233-3599

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(812) 462-3305

EXECUTIVE DIRECTOR

Stephen J. Johnson

November 17, 2005

Dr. Jay Siegel
Director of Forensic and Investigative Sciences
Indiana University Purdue University Indianapolis
402 N. Blackford Street LD 326
Indianapolis, IN 46202

Dear Jay:

As a veteran prosecutor and current assistant executive director of the Indiana Prosecuting Attorneys Council, I applaud your efforts to create a Master of Science in Forensic Science Program at Indiana University - Purdue University Indianapolis.

I am very cognizant of the problem the Indiana State Police laboratories are experiencing as they try to keep up with the ever increasing demand for the testing of various crime scene samples. In large part this problem appears to be the result of the difficulty in retaining analysts at the four State Police labs. In that there are currently no graduates of an Indiana forensic science program, the Indiana State Police must go outside Indiana to hire the people needed. Analysts who come from out of state stay for a period of time but usually return to their state of origin. Indiana desperately needs a forensic science program that will prepare Indiana students for the important work to be done in the State's forensic laboratories.

Thank you for proposing a program designed, long term, to provide well-qualified professionals to meet the ever growing demand for forensic scientists.

Sincerely,

Rebecca S. McClure

Rebecca S. McClure
Assistant Executive Director

RSM/sle



INDIANAPOLIS-MARION COUNTY FORENSIC SERVICES AGENCY

Doctor Dennis J. Nicholas Institute of Forensic Science

40 SOUTH ALABAMA STREET • INDIANAPOLIS, INDIANA 46204

PHONE (317) 327-3670 • FAX (317) 327-3607

Michael M. Medler
Laboratory Director

November 16, 2005

Dr. Jay Siegel
IUPUI
402 Blackford Street, LD 326
Indianapolis, IN 46202

Dr. Siegel;

The Master of Science in Forensic Sciences program at IUPUI should prove to be a tremendous benefit to the Indianapolis-Marion County Forensic Services Agency (I-MCFSA). The need for forensic science in criminal investigations continues to grow at a rapid pace in Indianapolis and Marion County's criminal justice system. This growth is driven by new and improved technologies, the needs of law enforcement and the courts, and the public's demand for increased forensic science in criminal cases.

Currently, the I-MCFSA employs thirty-one (31) forensic scientists, fourteen (14) crime scene investigators, three (3) morgue liaison investigators, and seven (7) administrative/evidence clerks. The I-MCFSA completed over 13,000 forensic cases in 2004. In comparison to the Indiana State Police Laboratory system, that figure is approximately 800 cases less than their four (4) laboratories combined. In order to reduce backlogs in the system, we are adding five (5) new forensic scientists by early 2006. Our laboratory will need to continue to grow in size and personnel if our submission rates on cases continue to increase.

A Master's program in forensic science will be beneficial to the I-MCFSA by providing viable candidates to a competitive applicant pool. The Master of Science in Forensic Science also provides us with the opportunity to shorten training periods and cause "real" casework to commence earlier. When on-the-job training time can be decreased, due to the fact that the Masters program covers advanced areas in a forensic discipline, the forensic laboratory is the winner. Not only does this reduce training costs, it allows casework to be completed sooner, thus hitting the backlog issues sooner.

Overall, as Director of the I-MCFSA, I sincerely support the Master of Science in Forensic Science at IUPUI. The program will be a benefit to forensic laboratories, the criminal justice system, IUPUI and the community as a whole.

Sincerely,

Michael M. Medler

MMM/iln

– State of Indiana –

Law Enforcement Training Board



PO Box 313
Plainfield, Indiana 46168-0313

Phone 317/839-5191
Fax 317/839-9741

www.in.gov/ilea

November 28, 2005

To Whom It May Concern,

The Indiana Law Enforcement Academy, a central training academy for new police officers, certifies over 450 new police officers annually for the agencies all across our state. We are in hopes that forensic science continues to blossom in Indiana.

IUPUI's efforts in their Forensic Science masters degree program may be the best example of what we expect our new officers to have available to them in the field in the near future.

We support Dr. Jay Siegel and his staff in this endeavor.

Sincerely,

Scott C. Mellinger
Executive Director

SCM:jh

"For All the People"

INDIANA UNIVERSITY



SCHOOL OF MEDICINE

November 23, 2005

Jay A. Siegel, Ph.D., Director
Forensic and Investigative Sciences Program
IUPUI School of Science, LD326
402 North Blackford Street
Indianapolis, IN 46202

Dear Jay:

I have reviewed your proposal for the Masters of Science in Forensic Science. This is a logical extension of the undergraduate program, and will fill a need in the state for appropriate advance training in Forensic Science.

The Indiana State Department of Toxicology performs essential Forensic work in Indiana. With the Alcohol Breath Test program and our Forensic Toxicology Laboratory we assist law enforcement in Indiana in controlling impaired driving. As our capabilities expand to support increasing needs, we expect to have openings for people trained in the Forensic Toxicology specialty in the new Masters program.

As the program develops, I am very interested in providing input from the perspective of our Department and from that of the Society of Forensic Toxicologists, of which I am a member.

I believe the MS in Forensic Science will be a significant addition to the IUPUI community, and to the state of Indiana, and strongly support it. Please let me know if there is anything else I can do to assist you in getting the program approved.

DEPARTMENT OF
PHARMACOLOGY AND
TOXICOLOGY

STATE DEPARTMENT
OF TOXICOLOGY

950 North Meridian Street
Suite 960
Indianapolis, Indiana
46204

317-274-7825
Fax: 317-278-2836

Sincerely,

A handwritten signature in cursive script that reads "Peter F. Method".

Peter F. Method, Ph.D.
Acting Director

Roger Park, Consultant
Roger L. Park, P.E.
907 Clossey Drive
Indianapolis IN 46227-2531

Telephone
317-695-5627

Facsimile
317-881-3412

November 23, 2005

Jay A. Siegel, Ph. D.
Director of Forensic & Investigative Science Program
IUPUI School of Science, LD 326
402 N. Blackford Street
Indianapolis 46202

Re: Masters of Science in Forensic Sciences proposal

Dear Dr. Siegel,

I have reviewed and wholeheartedly support your proposal to the Indiana Higher Education Commission for a graduate level program in forensic sciences at IUPUI.

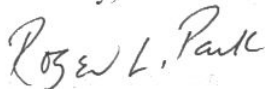
I have been involved in providing forensic engineering services since 1970 and for the ten years prior to my June, 2005, retirement worked solely in the area of forensics with Wolf Technical Services, Inc. The last five of those years was as president of the firm.

While my personal experiences in forensics tend to be in the engineering discipline as provided to civil litigants, I am very familiar with the life science aspects of forensics as used in the criminal side of law. There is a strong presence of life science programs in Indiana, and I believe this area holds much hope for relieving the brain drain that Indiana has been experiencing.

Given IUPUI's present undergraduate program, its central location, the absence of any other similar program offered within the state of Indiana, and the presence of prospective employers already present in the Indianapolis area, IUPUI is a natural for the presentation of this proposed graduate degree program.

What may I be doing to assist in the favorable response from the commission?

Sincerely,



Roger L. Park, P.E., F ASCE
RLPCrsp/iupui

RogerParkConsultant@att.net
www.rogerparkconsultant.home.att.net

**FROM THE OFFICE OF
SHERIFF OF MONTGOMERY COUNTY**

**P.O. BOX 663
CRAWFORDSVILLE, INDIANA 47933
PHONE: (765) 362-3740
FAX: (765) 362-1587**

DENNIS L. RICE – SHERIFF

December 30, 2005

Jay Siegel, Ph.D.

Director – Forensic and Investigative Sciences Program
IUPUI – School of Science, LD 326
402 North Blackford Street
Indianapolis, Indiana 47202

Dear Dr. Siegel,

I am writing to express my support of the masters program in forensic science. With the growing needs in law enforcement and the increasing changes in technology I believe the demand for individuals trained in forensic science will increasingly be in demand.

I have been in law enforcement for over thirty years and the need for forensic exams of evidence has grown dramatically, especially in the last few years. The advances in technology have given us many new tools to aid in the investigation of criminal cases. Ones that we could only dream of in the past.

The public demand upon law enforcement to be effective continues to increase. Therefore, it is important that there highly trained quality individuals that possess the knowledge and ability to aid law enforcement in the judicial process.

Again, I feel there is a strong need for the program and I support the efforts being made for its establishment.

Sincerely,



Dennis L. Rice
Sheriff