The mission of the Forensic and Investigative Sciences Program (FIS) at Indiana University Purdue University Indianapolis is to develop professional, ethical graduates with the highest quality education in the natural, physical, and forensic sciences, law and criminal justice, and to successfully prepare students for advanced degrees, employment, and research in forensic science and related fields.
# Table of Contents

From the Director 3  
From the New Kid on the Block . . . Donna Roskowski 6  
Reflections on the Year from Christine Picard 8  
A Year from the Desk of Gina Londino . . . 10  
What’s Happening with Nick Manicke? 12  
The lab is in full swing . . . So what’s new with Susan Walsh? 13  
A Bittersweet Milestone for Amy Madi 16  
Publications by FIS Faculty 18  
Presentations by FIS Faculty 20  
Funding 22  
Student Demographic Profile 23  
Undergraduate Student Academic Profile 25  
FIS Trends 26  
FIS Undergraduate Student Research 28  
Graduate Student Research 29  
Student Internships 31  
Community Involvement 37  
Forensic Science Club 39  
Student Awards 41  
Awards 42  
Graduation 43  
2016 Graduates Get a Quick Start on Their Future 45  
Where do FIS students go after graduation? 46
From the Director . . .

As we finish the 2015-2016 academic year, I can report that the FIS Program continues to grow, reach more students, and see our alumni move onto successful careers. I am especially proud of our faculty and staff, who continue to excel at their jobs. I have counted on them even more this year as I was on sabbatical leave in Spring 2016. After a successful external review in Fall 2015, I am excited to now make those recommendations a reality. I am also grateful to our Board of Visitors, whose input and assistance is invaluable.

FIS Board of Visitors

Ed Littlejohn, Director
Indiana State Department of Toxicology

Michael Medler, Director
Indianapolis Marion County Forensic Services Agency

Carl Sobieralski
DNA Technical Leader
Indiana State Police
Indianapolis Regional Laboratory

Mark Ahonen
Chemistry Section Supervisor
Indiana State Police Laboratory

Judge Cale J. Bradford
Court of Appeals of Indiana

Major Steve Holland, Commander
Indiana State Police Laboratory Division

Denise Purdie Andrews
Executive Director, Science & Technology
AIT Laboratories

Frances Watson
School of Law

Jeremy Carter
School of Public and Environmental Affairs

Thomas Stucky
School of Public and Environmental Affairs

Jeremy Wilson
Department of Anthropology

Simon Rhodes
Dean, School of Science

George Sandusky
Pathology
School of Medicine

Greg Smith
Senior Conservation Scientist
Indianapolis Museum of Art

Sonia J. Leerkamp
Attorney at Law

TEACHING

Fall semester 2015 found me teaching FIS 40100/FIS 40101 Forensic Chemistry I as well as FIS 51100 Forensic Chemistry I. Both lecture courses went well. In FIS 40101 we continued to upgrade our lab exercises, including the use of a new FTIR microscope. It was very rewarding to work with our latest group of seniors as well as our first class of non-thesis M.S. students.
**RESEARCH**

My research group is currently working on two main projects:

**Forensic Entomology:** We are wrapping up our collaborative project with Dr. Picard’s lab on the determination of species and age of fly pupae, which can be used to help establish a post-mortem interval (PMI) in a homicide investigation. This project formed a major portion of the Ph.D. dissertation for William Kranz, who graduated from our group in May 2016. In particular, Wil documented several differences among four different fly species as a function of genetics and age. Compounds such as palmitoleic acid, linolenic acid, cholesterol, and several alkanes were found to be potentially-good markers for age determination.

**Analysis of Controlled Substances:** We began work on a new project in 2015 that is concerned with the analysis of drugs of abuse. In particular, we are developing an automated method for extracting and separating these compounds from mixtures using a robotic autosampler and gas chromatography/mass spectrometry. This work will be a major part of the M.S. thesis for Jordan Ash, who will be graduating in December 2016.

**EXTERNAL REVIEW**

We achieved a major goal in Fall 2015 by completing an external review exercise. This was accomplished with the assistance of the School of Science as well as the Chancellor’s Office. The review team included Glen Jackson (West Virginia University), Ruth Smith (Michigan State University), Steven Holland (Indiana State Police Laboratory Division), Mihran Tuceryan (IUPUI Department of Computer & Information Science), and Jeremy J. Wilson (IUPUI Department of Anthropology). The review committee made a number of recommendations for the Program and School, including:

- Increase student support in the form of TA lines to support both undergraduate growth and graduate level quality (i.e., additional lab sections at the undergraduate level and a laboratory component for the non-thesis M.S. degree).
- Provide the Program with the flexibility to hire additional tenure-track faculty directly into the Program or into any other existing unit on campus. The new faculty member(s) should add sufficient expertise to enable a new track to be added to the undergraduate degree, thereby facilitating growth in undergraduate enrollment.
- In the event of an increase in undergraduate enrollment, hire additional academic support staff, particularly a second advisor.
- Identify an independent space to be an administrative ‘home’ for the Program. This ‘home’ would provide a waiting area for guests and visitors and include appropriate signage and marketing for the Program.
- Create themed learning communities (TLCs) to allow bulk course scheduling for students in the Program. FIS TLCs would foster social cohesion among the undergraduate students, which is essential to help them establish a Forensic and Investigative Sciences identity and culture.
- Develop a more effective form of summative assessment that focuses on a real world application of students’ knowledge and training. The summative assessment should ideally come in
the last semester of study for the undergraduate students.

- Bolster the Program’s research culture at the graduate level by establishing a seminar speaker series— for outside speakers to present to the students— or by providing travel funds for students to present research at national conferences.

**SABBATICAL LEAVE**

In Spring 2016 I took a sabbatical leave, working at the Indianapolis Museum of Art (IMA) and at Curtin University in Perth, Western Australia. At the IMA, I learned about thermal analysis of polymers—with a particular focus on assessing the extent to which polymers found in artwork (e.g., Mylar, PVC) age. There are also forensic implications to the aging of polymers as it may be possible to determine the relative age of pieces of evidence such as PVC pipe, car headlight lenses, and textile fibers. During my time at Curtin University, I learned about ancient pigments, Egyptian Blue in particular. This material is of interest in art conservation given its prevalence in art from ancient Egypt. It may also find use as a modern fingerprint powder as it is strongly luminescent.

Untitled (Mylar) by Tara Donovan (1969 -). This artwork is made from metallized Mylar®. The extent to which the polymer is aging is currently being studied using differential scanning calorimetry (DSC).

Image of a soda can that has been dusted with micronized Egyptian Blue, left: illuminated with white light with no camera filter, right: illuminated with 590 nm light and a near infrared camera filter.

Image of three ancient pigments under white light (left) and 450 nm incident light and viewed in the near infrared (right). Samples: Han Purple (top), Egyptian Blue (middle), Han Blue (bottom). Photography: Canon EOS 40D, Canon zoom lens EF-S 18-55 mm (1:3.5-5.6), Lens filters: HOYA 58 mm UV(0), HOYA 62 mm infrared (RM 90).
It has been seven months since I joined the crew of the IUPUI Forensic and Investigative Sciences Program as an academic specialist. It has been a whirlwind of new experiences for me, new challenges, and it is a bit of a learning curve as I take on the maintenance of a few new types of instrumentation, and the fine details of laboratory safety and management.

**TEACHING**

I am teaching the FIS 10100 and FIS 10101 Investigating Forensic Science courses which are complementary courses that are designed primarily for students who generally do not have an extensive science background. Both classes are fun and give the students a little taste of what forensic science is all about, dispelling the “CSI” myths without overloading them with heavy scientific theory. During the fall, I observed Gina Londino teach both courses in preparation for taking over these fun and engaging classes starting in the spring semester. FIS 10100 has been taught in the fall and spring semesters this year, completing its first full class year. Both classes are approved classes for Life and Physical Science credits on the general education core. For the first time, the lab class will be offered during the first summer term and is available for forensic minor students to complete their required coursework in a shorter timeframe.

The laboratory portion of the class is my favorite. I am really enjoying it. Gina Londino co-authored our lab manual, and it’s really a great book! I’ve added the firearms examination into the class starting this semester. Thanks to Mark Keisler of the Indiana State Police Laboratory for his help and assistance! It went really well, and I am looking forward to adjusting that lab for the students to have an even better experience next semester. Seeing the students learning and getting that “hey, this is cool!” is a very rewarding experience.

**Students in Investigating Forensic Science**
**CAMPUS INVOLVEMENT**

**Forensic Science Club Murder Mystery:** It was murder in Wonderland, and the Forensic Science Club hosted their annual Murder Mystery Dinner to solve the crime. Was it sweet Alice? The Mad Hatter? Or was it the White Rabbit?

I had the opportunity to attend the Forensic Science Club Murder Mystery Dinner as the paparazzi photographer. The club did a wonderful job in their roles and engaging the audience. It was night of good food and good fun! I can’t wait to see what they do next year!

**The Golden Goggles Competition:** Our team participated in the “Golden Goggles” as the only competing faculty team, and gave the winning team a good fight. This was my first time competing. This was a great team-building experience! This is truly an amazing group and I am so glad to be a part of such a fun, motivated, and competitive bunch! Next year, the goggles are going to be ours!!!!

**TEAM CSI:IUPUI**

Christine Picard, Donna Roskowski, Nick Manicke, Gina Londino, Susan Walsh
Reflections on the year from Dr. Christine Picard

I have developed a fundamental research program based on the field of forensic entomology, with an emphasis on basic science in support of the forensic sciences. It is important to me to continue promoting science, and I have been lucky to be able to do so using forensic science. I intend to continue along this trajectory to produce the next generation of forensic scientists through my research, teaching, and service to the community.

RESEARCH

My research program has flourished because of the students that have become a part of my research program. My lab is the current home to three Ph.D. students (one is expected to graduate in 2017, and two expected to graduate in 2018). In Fall 2016, I will be taking on one new FIS MS student, and a Fulbright Scholar has been accepted into our program. Pending her acceptance of our offer, I will have two FIS MS students starting in the Fall 2016.

TEACHING

In the Fall 2015, I taught my first graduate-only, forensic biology class with six students. This first group of MS non-thesis students was exceptional, and as our program continues to grow, I expect a continuation of great students. Our MS students, however, do not get the opportunity to gain any laboratory experience (except in Forensic Microscopy), so I hope to try and incorporate more lab-based projects (other than profile interpretation, which was done plenty in the class) in the Fall 2016 class. This may mean a greater burden on the students to ensure they have learned the appropriate background information on their own so we can focus on some lab-based experiences during class time.

Gina Dembinski, Ph.D. student in the Picard lab, was awarded the very prestigious J. Edgar Hoover Foundation Scholarship Award.

Photo from the reception (left to right):

FIS Director John Goodpaster, Dean Simon Rhodes, Gina Dembinski, Executive Vice Chancellor and Chief Academic Officer (Interim) Kathy Johnson, and Former FBI agent /Chairman of the Board & Director of the J. Edgar Hoover Foundation, William Branon.
My evaluations on the student satisfaction surveys have remained steady (even with the incorporation of new electronic surveys) with an overall average of 4.99/6 for my undergraduate courses, and 4.97/6 for my graduate courses (since the incorporation of the new 6-point system). In 2016, I was awarded a Trustees Teaching Award from the School of Science. School of Science mentoring data includes a total of 29 Level 1 citations and 13 Level 2 citations – keeping in mind I am someone who only teaches small senior level undergraduate classes, the number of students I encounter each academic year is approximately 10 students.

In an effort to improve the overall education of biology students, I also participated in the development of a new introductory graduate class for Biology graduate students (BIOL 59500), where I helped coordinate the presentation and manuscript portion of the class, and led an exercise in writing with the students. And finally, for both research and teaching missions, I implemented a research project with the honors introductory biology lab introducing students to bioinformatics research and generating data (currently ongoing) to find a genetic sex marker. This included four sections of a three hour lab for approximately one half the semester for 63 students. The students truly enjoyed learning bioinformatics and learning a little bit about the flies that play such an important ecological role.

Judging mock trials for the senior forensic biology students in moot court
A Year from the Desk of Gina Londino . . .

Over the past year, I have been involved with maintaining my teaching responsibilities, helping train our new academic specialist, and serving the university through multiple groups. I continued to teach three courses during each semester which included Concepts in Forensic Science, Forensic Microscopy, and Investigating Forensic Science lecture and laboratory. I also taught Advanced Forensic Microscopy for both of our graduate programs. As an instructor I am continually changing contents in all of my courses and updating assignments. I have also been participating in service to the university through a community of practice group and the distance education committee.

COURSE DEVELOPMENT

This past fall I had the most students I have ever had in my 10 years at IUPUI as a professor. In just one course (FIS 20500) I had 270 students registered. This was great for our program, as our credit hours continue to grow.

In my introductory courses (FIS 20500 and FIS 20600) I have been renovating my lectures and adding new technologies available through IUPUI. This past fall I participated in a pilot using clickers in the classroom with students using their own devices. As most pilots go, there were some challenges, and we were limited by the wireless capabilities. Overall, I think that the activity in the classroom that size was positive and would like to continue using clickers.

In FIS 20600, I started teaching in one of four interactive learning classrooms on our campus. Students worked in small groups throughout the semester on classroom activities and a final group project. Each group of students sat at a round table with computers and a large monitor. Student shared their work with everyone in the classroom via the monitors.

My microscopy courses continued to evolve. We now require all of our students (both chemistry and biology option) to complete microscopy; therefore, I added biology related laboratory exercises, such as botany and blood. I had a student work with me all year to develop and prepare lab exercises for the graduate microscopy course. This has been a great experience for this student and also an opportunity to form relationships with wildlife groups around Indianapolis.

As for the new non-major forensic science lecture and laboratory course, I officially handed its teaching over to our new academic specialist. My new project is teaching a freshman seminar course this fall for forensic science majors only. This will grow community with a cohort of incoming students and is in response to the external reviewers suggestion.
Finally, Investigating Forensic Science, a laboratory manual, was published by CRC Press in October. I also published a technical note with ChromaCal Datacolor on the use of their color calibrating equipment for microscopy on hair color interpretations. I want to continue doing scholarly work in education as well, hopefully forensic science education.

PROFESSIONAL DEVELOPMENT

I was re-elected as the treasurer for the Council of Forensic Science Educators (COFSE). This is a great way to communicate with other professors on their course content and laboratory ideas for students as well as share activities for the K-12 community. COFSE continues to grow and have a standing annual meeting at the American Academy of Forensic Sciences meeting in February. I also got more involved with the Academy. I was nominated as the Program Co-Chair for the General Section for the 2017 meeting. This is a two year appointment, and at the 2018 meeting I will be the Chair. This will be a great opportunity for me to develop a special session on forensic education.

COMMUNITY INVOLVEMENT

I am continuing my involvement with IUPUI as well. I am the Chair of a Community of Practice supported by Gateway to Graduation on Academic Integrity. Our group has been meeting monthly over two years developing documents to better educate students and faculty on the Code of Conduct policy at IUPUI. We have met with various faculty council groups and departments on campus. Our group recently presented at the E.C. Moore Symposium (pictured on the right) on excellence in teaching. We will also be surveying faculty and reporting our finding and suggestions. We just ended our year by meeting with the Executive Board of the IUPUI Faculty Council. They will be assigning a faculty council committee group to facilitate better communication of IUPUI’s policy and procedures for academic misconduct.

I am also initiating an internship program with Sun King Brewery. An FIS student will be working with the brewery’s quality assurance and control laboratory manager on quantitatively measuring alcohol content in craft beer as a new FDA regulation will soon be in place for craft breweries in the United States. The project will also include detecting the concentration of off-flavors of beer in comparison with daily sensory tasting done at the brewery.
What’s Happening With Nick Manicke

The past year was an exciting one in terms of both teaching and research. I welcomed two new full-time graduate students into my lab: one chemistry Ph.D. student and one forensic chemistry MS student. We’ve had a productive year in the laboratory, and I was pleased to publish several papers, including one in Clinical Chemistry. I also taught FIS 40400 Forensic Chemistry II for the first time this spring. The course covered instrumental analysis of trace evidence and had 14 forensic chemistry majors enrolled.

RESEARCH

My research program focuses on bioanalytical and forensic chemistry, with a particular focus on the development of novel mass spectrometry related technologies. My research group currently consists of two forensic science masters students, two chemistry Ph.D. students, three undergraduate researchers, and a postdoctoral researcher.

Several students in the group are developing new techniques for forensic and clinical toxicology. In one project, we are developing a rapid mass spectrometry based method to screen for over 150 illicit drugs with an eye toward postmortem forensic toxicology. In another project, we are working with the medical director of the Indiana Poison Control Center to develop methods to screen for emerging designer drugs such as synthetic cannabinoids and bath salts.

We are also collaborating with a Department of Defense laboratory to develop better methods to detect chemical and biological warfare agents. We are developing new approaches to detect the agents in body fluid samples to detect exposure and also in environmental samples. This project has been approved for funding by the Department of Defense.

In addition to forensics applications, we also work with some clinical chemistry applications. We published a paper in Clinical Chemistry in the last year, and Thermo Scientific is now supporting my group financially to explore more of these sorts of applications.

SERVICE

I served on the technical facilities committee and the undergraduate curriculum committee for the Department of Chemistry and Chemical Biology. I also served as the as faculty advisor for the Forensic Science Club.

TEACHING

I had the fall off from teaching, but taught two courses this spring: FIS 40400/40401 Forensic Chemistry II and FIS 51200 Forensic Chemistry II. FIS 40400 is the second of our two semester forensic chemistry sequence required for our forensic chemistry students. It dealt with the important chemistries and instrumental techniques for analyzing drugs and forensic toxicology, as well as paint, glass, fibers, and gunshot residue. I also taught FIS 51200, which is the graduate level equivalent to this course. The course is cross-listed as a graduate course for chemistry students (CHEM 696 – Instrumental Analysis of Trace Evidence); several graduate students in chemistry enrolled in the course in addition to forensic science majors.
The lab is in full swing . . .

. . . so what’s new from Susan Walsh?

What an eventful year! I can finally say the lab feels comfortable, like every pipette is in its place and some solid research is underway. I have had some wonderful graduate and undergraduate students working together as a team to build the labs genome-phenome database: a solid source of data for several ongoing projects. Quickly approaching 2000 individuals, my aim of a solid repository for fundamental physical appearance prediction research supported though the National Institute of Justice (NIJ), is going well, both US and Irish collections are in full speed.

**RESEARCH**

This year my students have done great. My Ph.D. student Ryan was awarded an NIJ STEM fellowship for his work on facial morphology. He is well underway in terms of preparation for genome-wide association studies and analyses to be performed to elucidate some of the markers/genes associated with facial characteristics such as jawline. It is my hope that we will begin a solid collaboration with Mark Shriver of Penn State (original developer of the Parabon company facial prediction software). He is well known in the area of facial morphology. I do believe this will make Ryan’s Ph.D. a very successful one to work with one of the best in the field!

My FIS MS student Wesli Stubbs has settled into her research on hair pigmentation and we shall be using her microscopy skills that she has gained from Gina Londino to really paint accurate phenotypes. My Biology MS student Charanya Muralidharan has developed into a great, confident researcher and is finally starting to write up some of her results on pigmentation epistasis and methylation with our Polish collaborators which is very exciting as I hope we can get this published by the end of the year.

I was delighted that my research assistant Krystal Breslin began her MS in Biology at the start of this year. She began with individual 1 of the genome-phenome database and now thankfully she gets to really dig into the data as part of her MS. Krystal has also represented the laboratory at the International Symposium on Human Identification (ISHI) national conference which gained some press attention as she won the trip through a competition with Illumina and has done interviews and written blogs documenting her experience of the conference which has been great exposure for the forensics program here at IUPUI. Krystal is also working on a large hair structure project with the consortium EUROFORGEN that is quite exciting, as we shall be using next generation sequencing technologies we obtained from the Department of Defense in the equipment grant last year.

My undergraduates Megan Welch and Stephanie Farmer have been wonderful additions to the lab and have really impressed me with the standard of undergraduate research in both the Biology Department and FIS Program. Megan has now a summer position at the
Defense Forensic Science Center (DFSC), and Stephanie shall join me to do her MS in Biology in Jan 2017.

**PUBLICATIONS AND TALKS**

In terms of publications, I have published one collaboration paper with our Netherlands colleagues on skin color variation in Europeans in the journal Human Genetics. I have done an invited commentary on the genetics of fingerprint patterns for the journal Investigative Dermatology. Lastly, I have contributed two book chapters on DNA phenotyping; one to a Handbook on Forensic Genetics and the other to Forensic DNA profiling protocols.

In September 2015, I was invited to conduct a workshop on DNA phenotyping in Krakow, Poland at the International Society on Forensic Genetics (ISFG) Conference. I thoroughly enjoyed Poland, and it was great to see the city my collaborators call home. I also gave a talk at the conference on skin color, which was well received. I hope to publish this work by the end of the year.

I have given several other talks throughout the year, from talks to police, sheriffs, genealogical societies to Science on Tap in an effort to engage with the community and speak about my research.

**TEACHING**

What a busy Spring semester! Christine Picard and I decided to test out a double teaching semester, which could mean travel to conferences and research could be extremely fruitful in the other semester. Although we both found it challenging in different ways, it certainly seems to have paid off, and we shall continue this into the new year. I felt teaching the large overlap of students in Forensic Genetics and Population Genetics at the same time really benefitted the students, as both topics bounce off each other. Concepts and methods could flow more for the students enabling them to really grasp both subjects, which I could certainly see on a daily basis in class and in their exams. My teaching assistant (TA) Gina Dembinski was amazing as always for the Forensic Genetics Lab, so next year will be a lot tougher as Gina was fully capable of leading the class. However, we managed to attain a very good student from this year to do her FIS MS in Christine’s Lab so that may lessen the blow slightly of Gina not being TA next year.

Mock trials with the senior Forensic Biology students
GRANTS

Other than my student Ryan’s fellowship, it has been a quiet year for grants. I have tried several types of small justice/community involvement projects to fund working with Indiana State Police (ISP) on the application of DNA phenotyping on some of their cold cases. I will continue to do this into the new year as I would really love to support local and state police in their efforts to solve these cases. I need to show the forensic community that DNA phenotyping is here to stay and can help. Even if we are not successful in finding funds for this venture, I will revisit my own budget to see if we can build it into one of my graduates projects if the state/county police are still interested, perhaps using the newly developed tests in the lab.
A Bittersweet Milestone for Amy Maidi

This year has been an exciting time of growth and reflection for me. It marks an important milestone for me. We are graduating my first cohort of FIS students. I started in September of their freshmen year. It is gratifying to see their amazing growth in knowledge, confidence, and maturity. It is also truly sad for me to let them go. I love the students in our program, and I will miss this group very much. They taught me as much as I taught them! I am comforted to know five of them will still be around. One will be pursuing his Ph.D. in Chemistry, one will be in the FIS Thesis Program, and three will be in the FIS Accelerated MS Program.

UP MY GAME

Recently, I read a book in which the author continually asked himself to “up his game.” This sports phrase is not new to anyone, but it does a fairly good job of summarizing this year for me. With so many new responsibilities, student struggles, our director on sabbatical, and an external review, I had many moments to pause and ask how I “up my game.” I was deeply involved in the external review which provided a very new way of looking at the FIS Program, my role, and the future. I am excited to see where we will go after taking a step back and having others share their insights. One thing was clear to me as I peered into this mirror, our next step will require vision and support at all levels. I cannot wait to see what answers bubble up.

LEADING THROUGH SERVICE

Professionally, I have taken on numerous new roles. I am serving as the President of JACADA, the IUPUI professional advising association which is affiliated with NACADA, our national body. In this role I have acted as the advising voice for the whole campus on the AdRx Technical Committee. AdRx is the university-wide note keeping system, along with a vast and growing array of tools. It is amazing to see the hard work of meeting twice a month and attending three in-person, all day meetings pay off. The dividend has been in the form of huge strides in the technology to meet the needs of all student services professionals throughout the IU system. I also participated in the IU Directors of Advising meetings where decisions are made about the future of advising at IU.
BRIDGE TO THE REAL WORLD

Our experiment with workshops taught by real world practitioners continues. The students are getting wonderful experiences that help them know more about forensic science and more about themselves. This year we offered:

- Forensic Toxicology
- Crime Scene Photography
- Blood Spatter
- Fingerprinting
- Crime Scene Investigation 2
- Basic Fire Arms and Fired Evidence

Once again, our instructors received glowing reviews:

“…He has a ton of experience that he is more than willing to share with us, and in a multitude of fields. He’s opened my eyes to many more career paths for my major than I would have thought possible. Absolutely love this class, would recommend it to everyone even non-Forensics majors.”

“This class is great! It is extremely interesting and it’s great to hear from someone who has experience. I wish it could be an entire semester!”

Of course our workshops are not the only place our students get to connect with professionals and their future.

- Professional Issues in Forensic Science is taught by Carl Sobieralski who brings decades of experience dealing with the most complicated ethical questions.
- Judge Cale Bradford brings the students right into the courthouse with his class Forensic Science and the Law.

I love teaching the capstone class. With mock interviews, resume help, research, presentations, and career advice, I consider it the bridge to help the students cross over to the career that is waiting for them.

AND THE WINNER IS . . .

We were all excited to nominate Judge Cale Bradford for the Adjunct Faculty of the Year Award. Even more thrilled when he won! I was honored and grateful to win the School of Science Academic Advising Award. It was truly special to win and be there to celebrate with this group of students—the ones I started with. It was as if things had come full circle. But not for long! I am already getting ready to welcome in 40 new students during orientations this summer. I can’t wait! I will be assisting Prof. Londino in the freshmen seminar, so I am looking forward to getting to know our new students well.
Publications by FIS Faculty

Dr. Nick Manicke


Dr. Christine Picard


Prof. Gina Londino


Dr. Susan Walsh


**Walsh S.**, Kayser M. Chapter 17: A practical guide to the HIrisPlex system. Forensic DNA profiling protocols. Due for publication May 2016.


**Dr. John Goodpaster**


Kranz W.D., Carroll CJ, **Goodpaster J.V.** Detection of prohibited treatment products on racing tires using headspace solid phase microextraction (SPME) and gas chromatography/mass spectrometry (GC/MS). Anal Methods. 2016;8:177-82.

Bors, D., **Goodpaster J.** Chemical analysis of racing fuels using total vaporization and gas chromatography mass spectrometry (GC/MS). Analytical Methods (2016).


Presentations by FIS Faculty


A.A. Andere, “Comparative Genomic Approaches to Forensic Entomology.” IU South Bend, South Bend, Indiana, March 2016.

C.J. Picard, “From Genotypes to Phenotypes (and Vice Versa): Forensic Biology in the ‘Omics Era.” IUPUI Department of Biology, Indianapolis, IN, October 2015.

C.J. Picard, “Forensic Entomology in the Genomics Era: How Little We Know with So Much Data,” University of Indianapolis, Indianapolis, IN, October 2015.

C.J. Picard, “Forensic Entomology in the Genomics Era: How Little We Know with So Much Data,” DePauw University, Greencastle, IN, September, 2015


G. Londino: Color Management Improves Comparison of Hair Color. Poster Presentation at Impression Pattern and Trace Evidence Symposium; 27 August 2015.


Funding

**Dr. John Goodpaster**


**John Goodpaster** (PI) and **Christine Picard** (co-PI), “Species and Age Determination of Blow Fly Pupae Based upon Headspace Analysis,” National Institute of Justice, 1/1/2014-12/31/2016, $197,491.


**John Goodpaster** (PI), “Automated Derivatization and Identification of Controlled Substances via Total Vaporization Solid Phase Microextraction (TV-SPME) and Gas Chromatography/Mass Spectrometry (GC/MS),” National Institute of Justice, 1/1/2016-12/31/2017, $190,223.

**Dr. Nick Manicke**


**Dr. Christine Picard**


**Dr. Susan Walsh**

Ryan Eller (Ph.D. student) and **Susan Walsh** (Co-PI and Ph.D. advisor), “An Investigation into the genetic basis of human facial morphology and its prediction from DNA, using a globally distributed panel of individuals from the US and Europe,” National Institute of Justice FY 2015 GRF-STEM fellowship (Graduate Research Fellowship in Science, Technology, Engineering and Mathematics). 1/16-12/18 with annual renewal up to $113,364 ($37,788/year).


**Susan Walsh** (PI), “Improving the Prediction of Human Quantitative Pigmentation Traits such as Eye, Hair and Skin Color Using a Worldwide Representation Panel of US and European Individuals,” National Institute of Justice (NIJ), 1/15-12/31/17, $1,123,403.

**Total funding for the FIS Program exceeded $2 million dollars!**
Student Demographic Profile (Fall 2015)

- **Undergraduate (123)**
  - Full Time (109)
  - Part Time (14)

- **Graduate (10)**

- **In State (109)**
  - Full Time (109)
  - Out of State (14)

- **Gender Distribution**
  - Male (23)
  - Female (100)

- **Graduate Student Breakdown**
  - Chemistry Thesis (3)
  - Chemistry Non-Thesis (4)
  - Biology Thesis (1)
  - Biology Non-Thesis (2)

- **Class Levels**
  - Senior (35)
  - Junior (25)
  - Sophomore (29)
  - Freshman (34)
Student Demographic Profile (Fall 2015)

Where are the out of state students from?

- California
- Illinois
- Kentucky
- Michigan
- Minnesota
- Ohio
- South Carolina
- Texas
- Virginia
- Washington
- Wisconsin
- Portugal
- Qatar

TOTAL STUDENTS PURSUING FIS BS AT IUPUI FALL 2015
The FIS Program is well represented on:

- The School of Science (SOS) Dean’s Honor List which requires a minimum 3.5 term GPA.
- The Science Scholar’s List which requires completion of at least 26 credits and 3.75 cumulative GPA.

---

**Fall Term GPA**

- A+ (4.0) 9%
- A, A- 29%
- B+, B, B- 21%
- C+, C, C- 25%
- Less than C- 16%

---

**Fall 2015 Undergraduate GPAs**

---

**FIS Student GPA at Graduation by Academic Year**

- 2006-2007
- 2007-2008
- 2008-2009
- 2009-2010
- 2010-2011
- 2011-2012
- 2012-2013
- 2013-2014
- 2014-2015

---

25
FIS Trends

FIS Undergraduate Students

FIS Graduate Students

University College Students Intending to Become FIS Majors
<table>
<thead>
<tr>
<th>Student</th>
<th>Mentor</th>
<th>Research Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rachel Potter</td>
<td>Dr. Nick Manicke</td>
<td>Development of Drug Screening Methods for Forensic Toxicology</td>
</tr>
<tr>
<td>Josiah McKenna</td>
<td>Dr. Nick Manicke</td>
<td>Detection of Chemical Warfare Agents</td>
</tr>
<tr>
<td>Brandon Bills</td>
<td>Dr. Nick Manicke</td>
<td>Ion Suppression and Recovery in Direct Mass Spectrometry Methods</td>
</tr>
<tr>
<td>Greta Jakstonyte</td>
<td>Dr. Nick Manicke</td>
<td>Detection of Synthetic Cannabinoids</td>
</tr>
<tr>
<td>Dana Bors</td>
<td>Dr. John Goodpaster</td>
<td>Determining the Spatial Distribution of Explosive Residues on Post Blast Debris</td>
</tr>
<tr>
<td>William Kranz</td>
<td>Dr. John Goodpaster</td>
<td>Identification of Blow Fly Pupae Based upon Lipid Profiling</td>
</tr>
<tr>
<td>Jordan Ash</td>
<td>Dr. John Goodpaster</td>
<td>Trace Analysis of Nitrate Ester Explosives</td>
</tr>
<tr>
<td>Gina Dembinski</td>
<td>Dr. Christine Picard</td>
<td>Development of a Multiplex Forensic DNA Phenotyping Assay in a U.S. Population</td>
</tr>
<tr>
<td>Anne Andere</td>
<td>Dr. Christine Picard</td>
<td>A Comparative Genomics Study of Sex Chromosome Evolution in Blow Flies</td>
</tr>
<tr>
<td>Charity Owings</td>
<td>Dr. Christine Picard</td>
<td>Mediators of Fine-Scale Population Structure in the Black Blow Fly, <em>Phormia regina</em> (Meigen)</td>
</tr>
<tr>
<td>Abeer Mohsen Salam</td>
<td>Dr. Christine Picard</td>
<td>Identification of Some Forensically Important Blow Flies from Egypt using Partial Sequencing of the Mitochondrial COI Gene</td>
</tr>
<tr>
<td>Ryan Eller</td>
<td>Dr. Susan Walsh</td>
<td>An Investigation into the Genetic Basis of Human Facial Morphology and Its Prediction from DNA, Using a Globally Distributed Panel of Individuals from the US and Europe</td>
</tr>
<tr>
<td>Charanya Muralidharan</td>
<td>Dr. Susan Walsh</td>
<td>Elucidating the Mechanisms/ Interactions Involved in Differing Hair Color Follicles</td>
</tr>
<tr>
<td>Krystal Breslin</td>
<td>Dr. Susan Walsh</td>
<td>Massive Parallel Sequencing (MPS) of Human Physical Appearance Prediction Markers</td>
</tr>
<tr>
<td>Wesli Stubbs</td>
<td>Dr. Susan Walsh</td>
<td>Microscopic and RNA Expression Analyses of Primate and Human hair</td>
</tr>
</tbody>
</table>
# Undergraduate FIS Student Research

Below is a sampling of research experiences undergraduate FIS students engaged in this year.

<table>
<thead>
<tr>
<th>Student</th>
<th>Mentor</th>
<th>Research Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adrienne Kelly</td>
<td>Prof. Gina Londino</td>
<td>Advanced Microscopy Laboratory Exercises</td>
</tr>
<tr>
<td>Grace Connolly</td>
<td>Dr. Nick Manicke</td>
<td>Development of Drug Screening Methods for Forensic Toxicology</td>
</tr>
<tr>
<td>Kristen Clark</td>
<td>Dr. Nick Manicke</td>
<td>Chemical Imaging of Fingermarks</td>
</tr>
<tr>
<td>Clinton Carroll</td>
<td>Dr. John Goodpaster</td>
<td>Total-Vaporization Solid-Phase Microextraction in the Analysis of Blowfly Pupae</td>
</tr>
<tr>
<td>Heather Mann</td>
<td>Dr. John Goodpaster</td>
<td>Determination of Hydrogen Sulfide as a Signaling Molecule in Stem Cells (collaboration with IUSM)</td>
</tr>
<tr>
<td>Lindsey VanCleave</td>
<td>Dr. John Goodpaster</td>
<td>Total-Vaporization Solid-Phase Microextraction in the Analysis of Blowfly Pupae</td>
</tr>
<tr>
<td>Megan Welch</td>
<td>Dr. Susan Walsh</td>
<td>HIrisPlex Performance in a US population</td>
</tr>
<tr>
<td>Amber Falaschetti</td>
<td>Mr. Rob Orr</td>
<td>The Benefits of a Processing Lab</td>
</tr>
<tr>
<td>Cody Howell</td>
<td>Dr. George Sandusky</td>
<td>Quantitative Image Analysis of Treatment of Total Brain Injury Induced Aspiration Pneumonia</td>
</tr>
<tr>
<td>Max Jacobsen</td>
<td>Dr. George Sandusky</td>
<td>Use of Whole Slide Digital Image Analysis for Determination of Expression of Twist-1 in Normal Panceata and Stage IV Pancreatic Ductal Adenocarcinomas</td>
</tr>
<tr>
<td>Cody Howell</td>
<td>Dr. George Sandusky</td>
<td>Aspiration Pneumonia in a Traumatic Brain Injury Model</td>
</tr>
<tr>
<td>Courtney Finnearty</td>
<td>Dr. George Sandusky</td>
<td>Tissue Microarray (TMA) Analysis on the Three Different Antibodies (GLS, GLUL, and Cav-1) in Breast Cancer Patients</td>
</tr>
<tr>
<td>Rachael Topolski</td>
<td>Dr. Murray Korc</td>
<td>Endocrinology Division</td>
</tr>
</tbody>
</table>
IUPUI and the FIS Program were well represented at the American Association for Cancer Research Annual Meeting. As you can see below, Dr. George Sandusky who serves on our Board of Visitors was a part of four presentations. **Max Jacobsen**, FIS Forensic Chemistry undergraduate, also presented to a national audience the research he has been working on in Dr. Sandusky’s lab.

**Sun, Apr 17, 1:00 - 5:00 PM**
426/3 - Identifying a predictive biomarker for chemotherapy (taxane) in patients with metastatic castration resistance prostate cancer

Greg A. Rothchild¹, George Sandusky¹, Constance J. Temm¹, Costantine Albany². ¹Indiana University School of Medicine, Indianapolis, IN; ²IU Simon Cancer Center, Indianapolis, IN

**Mon, Apr 18, 1:00 - 5:00 PM**
2258/20 - Digital whole slide quantitative image analysis of TOPO II and P53 in sarcomas evaluating both primary and lung metastatic tumors

Margaret Strack¹, George Sandusky¹, Daniel Rushing². ¹IU School of Medicine, Indianapolis, IN; ²IU Simon Cancer Center, Indianapolis, IN

**Wed, Apr 20, 7:30 - 11:00 AM**
4940/24 - Use of whole slide digital image analysis for determination of expression of Twist-1 in normal panceata and stage IV pancreatic ductal adenocarcinomas

Max Jacobsen¹, George Sandusky¹, Kavita Shah². ¹Indiana University School of Medicine, Indianapolis, IN; ²Purdue University Center for Cancer Research, West Lafayette, IN

**Wed, Apr 20, 7:30 - 11:00 AM**
5183/9 - Efficacy study of APX3330, a Ref-1 redox inhibitor, and Gemcitabine in a mouse pancreatic ductal adenocarcinoma model

Kyle C. McElyea, Max H. Jacobsen, Max Schmidt, Huiwen Cheng, Mark R. Kelley, George E. Sandusky, Melissa L. Fishel. Indiana University School of Medicine, Indianapolis, IN
Sarah Lewis

I work with Dr. Sandusky in the Pathology Research Laboratory for the Pathology Department in IU School of Medicine. Our lab works on several research projects with multiple hospitals and universities. To name a few projects I will be assisting with: image analysis on tissue slides on an eosinophilic esophagitis, germ cell tumors analysis, tissue microarray analysis using Imagescope and Leica Aperio System. I presented some of the research I have done with Dr. Sandusky at the IUPUI Research Day this spring. The project was also tissue microarray (TMA) analysis on the three different antibodies (GLS, GLUL, and Cav-1) in breast cancer patients.

Megan Welch

I will be doing a paid summer internship in latent prints at Defense Forensic Science Center (DFSC) before starting graduate school in the fall.

Shanda Armstrong

I will be working at a paid internship in explosives analysis at DFSC this summer.

Courtney Finnearty

I will be completing an internship in DNA and latent prints at DFSC this summer.
Alissa Partyka

I spent the spring semester interning with the Indiana State Police. I had the opportunity to ride with troopers, spend time with the CSI, go to the shooting range, attend a line of duty funeral, and participate in emergency vehicle operations. The experience allowed me to see the various units within the department, and that there is ample opportunity to move between disciplines and earn rank. Every single day was different, and I learned new and unique things from each trooper I rode with. I was able to do a variety of activities from run Lidar to complete crash reports. The internship was much more hands on than I expected, and it really allowed me to be right where I needed to be in order to decide whether or not this was the career for me. After completion of this internship, I have decided that my choice to apply for the Indiana State Police was one that I will not regret, and I someday hope to be a crime scene investigator for the Indiana State Police.

Running Lidar with the trooper in the undercover Mustang

Breaching a door

Shooting a .308 sniper rifle
During this spring semester, I had the privilege of interning at the Indianapolis-Marion County Forensic Services Agency with Tim Spears, who is a firearm examiner. My experience at the crime laboratory enhanced my passion for working in the forensic science field. From the first day, I was thrown into the steps and processes of analyzing evidence. I learned how to compare bullets and cartridge cases using a comparison microscope, upload the information into the Integrated Ballistics Identification System (IBIS), and conduct searches in the National Integrated Ballistics Information Network (NIBIN). I also had the opportunity to create casts of gun barrels and recover serial numbers that had been scratched out. The primary purpose of the internship was to accomplish a research study that explored the differences in bullet materials, such as brass or copper, had on making a positive identification from consecutively rifled barrels.

I gained a great deal of experience in the determining a positive identification of a cartridge and firearm. I hope to pursue a career in this field and I am grateful for the encouraging and challenging educational experience this internship provided and the guidance from Tim Spears.
Tabitha Lannom

I will be working with Upward Bound, a college preparatory program for low-income, first generation high school students in grades 9-12 from area Indianapolis high schools. Summer Academy is intended to give students a simulated college experience with the goals of improving students’ academic performance, increasing study skills, and lessening the anxiety of going to college. During this 5-week academic program, Upward Bound students participate in a residential experience and take classes in English, math, science, and foreign language. I will assist the staff and instructors with all components of the summer program including assisting with office duties, providing additional support in classrooms, coordinating study tables, and mentoring students.

Samantha Guinn

I will be a Science and Math Summer Camp Intern as an active and vital member of the summer camp team. I will cover the gamut of tasks that insure a meaningful learning experience for campers in K – 8th grade. In addition to responsibilities related to summer camps sponsored by Marian University, there will also be responsibilities related to field trip activities for K – 12 students who come to the Nina Mason Pulliam EcoLab as part of other summer camps.
### LIFE-HEALTH SCIENCES INTERNSHIP PROGRAM

<table>
<thead>
<tr>
<th>Intern Name</th>
<th>Cody Howell</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intern Major(s)</td>
<td>Forensic and Investigative Sciences and Biology</td>
</tr>
<tr>
<td>Mentor Name</td>
<td>Dr. George Sandusky</td>
</tr>
<tr>
<td>Mentor Department</td>
<td>Pathology</td>
</tr>
</tbody>
</table>

#### Quantitative Image Analysis of Treatment of Total Brain Injury Induced Aspiration Pneumonia

Ideal surgical transplant procedures involves the transfer of organs from donor to patient. Ideal conditions cannot always be achieved, even under the best conditions infections are sometimes transferred. One example: lung transplants from donors that have total brain injury (TBI) occurs when autonomic nervous system damage results in involuntary intake of food into the lungs, developing into aspiration pneumonia. This study evaluated mice with TBI that were treated with the following: aspiration pneumonia, aspiration treated with phosphate buffered saline (PBS), TBI without infection, TBI with aspiration and no treatment, TBI with PBS, TBI with aspiration treated with PBS, and two test groups of TBI with aspiration pneumonia; one dosed with BB5, the other with a proprietary complement inhibitor. Lung tissue was removed and fixed in 10% neutral buffered formalin (10% NBF) for 24 hours, processed into a paraffin block, microtomed and H&E stained. Slides were examined and whole slide digital images were created and evaluated via quantitative image analysis. Quantitative imaging software was used for calculating the percentage of inflammatory cellular infiltrates across the groups. The image analysis used Red-Green-Blue color algorithms to classify stained tissue slides. Initial analysis with Aperio Imagescope did not classify the color difference between similarly stained inflammatory cells and alveoli septa in the lungs. Indica Lab’s HALO software was used for the second analysis. Both drug treatment groups had a biologically significant reduction in aspiration pneumonia compared to the aspiration and TBI control groups with both systems. HALO was more specific in this difficult analysis.

<table>
<thead>
<tr>
<th>Intern Name</th>
<th>Amber Falaschetti</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intern Major(s)</td>
<td>Forensic Science, Chemistry</td>
</tr>
<tr>
<td>Mentor Name</td>
<td>Mr. Rob Orr</td>
</tr>
<tr>
<td>Mentor Department</td>
<td>CTSI / CTSL / DMCT</td>
</tr>
</tbody>
</table>

#### The Benefits of a Processing Lab

The purpose of a processing lab is to process and store samples as per study coordinators requests. This process includes setting up kits, receiving the samples, tracking them appropriately, and proper storage of samples. These actions are done by a qualified staff that has had training in Biological Safety, Bloodborne Pathogens, and General Lab Safety. Another advantage of utilizing a processing lab would be how well the equipment is maintained and monitored. The temperatures of the freezers are monitored 24/7 with an alarm system to notify when it goes out of scope. If a freezer does fail, there are backup freezers available so samples that need to be frozen stay frozen. The centrifuges are calibrated for temperature, speed, and time yearly and sanitized monthly to ensure the most accuracy. This is an SOP- driven lab so consistency and quality are guaranteed. These are some of the reasons as to why a principal investigator (PI) would prefer to utilize the services of this lab over doing it themselves.

Former LHSI intern Megan Welch as featured on the LHSI website
Biology Unit

I will be taking cases that contained a rape kit and determining success rates of the technique based on parameters. These cases will be cases that used the previous technique and those that use a newer/different technique. I will be comparing the success rates of the two techniques to determine if the new method is worse, the same, or better at creating a DNA profile.

Indianapolis-Marion County Forensic Services Agency

I will be interning at the Indianapolis-Marion County Forensic Services Agency (I-MCFSA) this summer. Indiana State Police OWI cases involving blood alcohol results where the cases have been finalized will be cataloged for destruction on site under the guidance of a forensic scientist at the I-MCFSA. This destruction process is necessary due to the volume of adjudicated cases approved by the Marion County Prosecutor’s Office and Indiana State Police at District 52 for destruction. I will also be helping I-MCFSA with the transition for the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Evansville Police Department

I will be working with Officer Vancleave in the Evansville Police Department. I will have the opportunity to accompany Officer Vancleave on police runs, review crime scene procedures, and receive training in
Community Involvement

Dr. Christine Picard acted as a mentor for Anne Ullyot, a Park Tudor high school student, who was completing a Global Scholars project.

Grace LeFevre joined Dr. Christine Picard’s lab as a Project SEED student, currently home-schooled in Indianapolis. She worked on the annotation of development genes in *Cochliomyia macellaria*.

Prof. Gina Londino mentored Liana Agrios through the Advancing Women Mentoring Program. In addition to meeting throughout the year, together they explored how strengths can be used in work and personal life by reading *Unstuck at Last* by Sarah Robinson who is an alumna of IUPUI.

---

**Wednesday, May 18, 5:30 pm**

**Forensic Entomology: From Sung Tzu’s Observations to Today’s Genomic Revolution**

By Christine J. Picard, PhD, Department of Biology, IUPUI

Forensic entomology uses living organisms to tell us about the process of decomposition. From the early days of observing the close association of decomposition and insects, to today, where we look into the genomes of these insects to learn about their behaviors and variabilities, this presentation will examine how far we’ve come – and where we are heading – in time of death estimations.
Prof. Gina Londino assisted with Science Olympiad Build it Day “Crime Busters” and “Forensic Chemistry” in November 2015.

Dr. John Goodpaster presented “Forensic Science Theater” at Boone Meadow Elementary School in Zionsville, IN.

Prof. Gina Londino is now serving as a member of the Board of Visitors for the Department of Chemistry at Rose-Hulman Institute of Technology.

Dr. Susan Walsh’s lab demonstrated at Celebrate Science Indiana.

Dr. Susan Walsh provided training and support to the Indiana State Police (ISP), ISP Academy, Marion County Sherriff’s Office, and the Indianapolis-Marion County Forensic Services Agency about her research.
Forensic Science Club

The Forensic Science Club hosted a variety of activities from general club meetings to a blood spatter activity in addition to the traditional Murder Mystery Dinner.

The club put together a brand new activity in which students tried to mimic blood spatter patterns that were given to them, and the winners received prizes.

The club adopted a family during the holidays, and club members shopped for gifts to wrap and deliver to the family.
The Forensic Science Club Helps Student Peer into the Future by . . .
   . . . hosting guest speakers to talk about their ongoing research.
   . . . allowing students the opportunity to participate in Dr. Walsh’s current study.
   . . . touring the Marion County Crime Lab to get an inside look at the life of a forensic scientist.

The Murder Mystery Dinner had an amazing turnout with over **80 guests** from all over campus and beyond. The dinner’s theme this year was Alice in Wonderland, and two groups were able to solve the crime and identify the murderer.
Congratulations to Dana Yenko for being a IUPUI Top 100 Student for a second year!!!

**Outstanding Research Award**
This award is given to an outstanding student who has demonstrated excellence in research with commitment and desire to advance the field of Forensic Science.

**Clinton Carroll**
**Charles D. Irving**

**Academic Achievement Award**
This award is given for outstanding academic achievement, including high GPA and challenging course enrollment.

**Megan A. Welch**

**Student Leadership Award**
This award is presented to a student who has demonstrated leadership and service in the Forensic and Investigative Sciences (FIS) Program and/or the FIS Club.

**Zackery R. Roberson**

**Charles (Chuck) Gould Memorial Scholarship**
This scholarship is named for Charles (Chuck) Gould, who was an FIS graduate student and an analyst with the Indianapolis Marion County Forensic Services Agency (IMCFSA). Established by his family in his memory, this scholarship is given to the top second-year graduate student in the FIS program.

**Rachel Potter**

Adrienne Kelley was awarded the **Wilma K. Fife Memorial Scholarship** from the Chemistry Department.
Christine Picard, Trustees Teaching Award

Christine Picard was awarded the **Board of Trustees Teaching Award**. This award recognizes faculty excellence in teaching. This award is awarded to no more than 6% of tenured and tenure-track faculty members.

Judge Cale Bradford was awarded the School of Science **Outstanding Associate Professor Award**.

Dr. Picard working hard in her lab.

Amy Madi was awarded the School of Science **Academic Advising Award**.

George Sandusky, LHSI mentor and FIS Board of Visitors member, was awarded the **Distinguished Alumni Award** at Ohio State University.

Jeremy Wilson, Professor of Anthropology and Board of Visitor member, was awarded the **IUPUI JACADA Faculty Advisor of the Year Award**.

Judge Cale Bradford was awarded the School of Science **Outstanding Associate Professor Award**.

Jeremy Wilson, Professor of Anthropology and Board of Visitor member, was awarded the **IUPUI JACADA Faculty Advisor of the Year Award**.
MAY 2016

IGNITE
CELEBRATING SCIENCE GRADUATES

2016 Graduation
Congratulations to all the FIS 2016 Graduates!!!
### 2016 Graduates Getting a Quick Start on Their Future

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
<th>Role/Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allison Hodgin</td>
<td>AIT Bioscience</td>
<td>Working with Ligand Binding Assays</td>
</tr>
<tr>
<td>Clinton Carroll</td>
<td>AIT Laboratories</td>
<td>Analytical Chemist for the Confirmations Monitoring Unit</td>
</tr>
<tr>
<td>Erin Dunn</td>
<td>Polaris Laboratories</td>
<td>Laboratory Technician</td>
</tr>
<tr>
<td>Dana Yenko</td>
<td>Bode Cellmark Forensics (Lorton, VA)</td>
<td>DNA Technologist</td>
</tr>
<tr>
<td>Rachael Topolski</td>
<td>IU School of Medicine</td>
<td>Research Technician in Pancreatic Cancer</td>
</tr>
<tr>
<td>Megan Welch</td>
<td>Defense Forensic Science Center</td>
<td>Paid Intern in DNA and Latent Prints</td>
</tr>
<tr>
<td>Shanda Armstrong</td>
<td>Defense Forensic Science Center</td>
<td>Paid Intern in Explosives Analysis</td>
</tr>
<tr>
<td>Savanna Dollahan</td>
<td>BioStorage Technologies, Inc.</td>
<td>Operations Technician</td>
</tr>
<tr>
<td>Alissa Partyka</td>
<td>Indiana State Police</td>
<td>Entering the Academy</td>
</tr>
<tr>
<td>Heather Mann</td>
<td>IUPUI FIS Accelerated MS Program</td>
<td>Forensic Chemistry</td>
</tr>
<tr>
<td>Sarah Lewis</td>
<td>IUPUI FIS Thesis MS Program</td>
<td>Forensic Biology</td>
</tr>
<tr>
<td>Zackery Roberson</td>
<td>IUPUI Department of Chemistry Ph.D. Program</td>
<td>Analytical Chemistry</td>
</tr>
<tr>
<td>Hannah Caito</td>
<td>IUPUI FIS Accelerated MS Program  (acceptance pending)</td>
<td>Forensic Biology</td>
</tr>
<tr>
<td>Charles Irving</td>
<td>IUPUI FIS Accelerated MS Program</td>
<td>Forensic Chemistry</td>
</tr>
</tbody>
</table>

### FIS Alumna is Chosen for an Amazing Opportunity

Ashley Riley, FIS alumna and IU Medical School student, was chosen as one of only 66 medical and veterinary students in the country to receive a Howard Hughes Medical Institute fellowship to fund her proposed year away to allow her to do research in Dr. Thomas Südhof’s laboratory at Stanford University. Dr. Südhof won a 2013 Nobel Prize in Medicine "for their discoveries of machinery regulating vesicle traffic, a major transport system in our cells."
Where do FIS students go after graduation?

Below is a sampling of places our undergraduate students have gotten employment.

- Agilent Technologies
- AIT Laboratories
- AIT Bioscience
- Anheuser Busch Brewery (Missouri)
- Belize National Forensic Science Service (Belize)
- Bismarck Crime Laboratory (North Dakota)
- BioStorage Technologies, Inc.
- Bode Cellmark Forensics (Virginia)
- Buchi Laboratory Equipment (North Carolina)
- Carrollton Police Department (Kentucky)
- Colorcon
- Covance Laboratories
- Deaconess Health System
- Drug Enforcement Administration (DEA, Maryland)
- Dupage County Forensic Science Center (Illinois)
- Eli Lilly and Company
- Florida Department of Law Enforcement (Florida)
- Fort Wayne Police Department
- Heritage Crystal Clean
- Indiana Blood Center
- Indiana State Department of Toxicology
- Indiana State Police Forensic Laboratory
- Indianapolis-Marion County Forensic Services Agency
- IU Simon Cancer Center
- Lancaster Laboratories
- Marion County Coroner's Office
- Miami Valley Regional Crime Laboratory (Ohio)
- Mid America Clinical Laboratories
- Pepsico
- Polaris Laboratories
- Quintiles Laboratories
- Raabe Company (Wisconsin)
- Roche Diagnostics
- Sacramento County District Attorney's Office (California)
- Southern Illinois University Edwardsville
- St. Charles County Sheriff's Department (Missouri)
- St. Vincent Health
- Strand Analytical Laboratories
- United States Drug Testing Laboratory (Illinois)
- United Water
- University of Miami Miller School of Medicine (Florida)
- Van Nuys Medical Science Center

Below is a sampling of places our undergraduate students have attended graduate school.

- Drexel University: Physician’s Assistant School
- Indiana University Medical School
- Indiana University: Law School
- IUPUI: MS in Forensic Science
- IUPUI: Ph.D. in Chemistry
- Marion University School of Osteopathy
- Michigan State University
- University of Colorado Denver: Ph.D. in Biology
- University of Tennessee: Ph.D. in Chemistry

Below is a sampling of places our graduate students have gotten employment.

- Aria Diagnostics
- Butler University
- Colorado Bureau of Investigation
- Denver State Police
- Eli Lilly and Company
- Ideal Innovations, Inc. (Afghanistan)
- Indiana State Department of Health
- Indiana State Police Forensic Laboratory
- Microbac Laboratory Services
- Ocean Optics, (Florida)
- State of Colorado Biology Laboratory
- Sun King Brewery
- Texas Department of Public Safety