# San José State University Department of Justice Studies FS 160 Section 05

# Special Topics in Forensic Science: Advances in Forensic DNA

# Core Competency Area ,

# Fall 2012

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| Instructor: | Dr. Steven Lee |
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| Office Hours: | M 1530-1730 by email appt in office and W 1430-1630 on line. |
| Class Days/Time: | W 1630-1915 |
| Classroom: | MH 323 |
| Prerequisites: | Justice Studies or Forensic Science major; Justice Studies minor, or by instructor consent. |

## Course Catalogue Description

Range of topics in Forensic Science which will vary by semester. Topics may include Blood Spatter Analysis, Microscopy and Trace Evidence, Forensic Art, Facial Reconstruction, and others.

This semester the special topic is Advances in Forensic DNA

## Course Goals and Student Learning Objectives

### Course Content Learning Outcomes

Upon successful completion of this course, students will be able to:

LO1 Demonstrate a clear understanding of the concepts, methodologies and forensic applications of DNA including low copy number (low template), degradation, mixtures, YSTRs, mRNA profiling, familial searching, phenotype profiling and databasing

LO2 Demonstrate a clear understanding of mtDNA genetics and forensic practices, including the potential application of advanced methods such as next generation DNA sequencing.

LO3 Demonstrate reasoning and argumentation that indicates an accurate and complete understanding of the issues, use of examples, data and references to support knowledge claims, and logical presentation of ideas, drawing valid conclusions.

LO4 Think critically and solve problems using the scientific method. The course will also promote synthesis of knowledge gleaned from related learning units and current forensic DNA practices. Some mathematical reasoning will be used to understand fundamental principles and their relationship to selected societal issues.

LO6 Critically analyze scientific, ethical, legal and social implications of forensic DNA and new technologies as demonstrated by delivering an oral presentation and a written final research grant application paper on a forensic DNA research topic

## Required Readings

### Readings

Journal articles, and other readings will be accessible at the SJSU library, on reserve or will be accessible on line. Citations and URLs for on line materials will be provided in assignments.

NCJRS Publications at [http://www.ncjrs.gov](http://www.ncjrs.gov/)

NIST STRBase at <http://www.cstl.nist.gov/div831/strbase/index.htm>

President’s DNA Initiative at [http://www.dna.gov](http://www.dna.gov/)

Also see the last section of this greensheet on additional webcasts and readings.

## Classroom Protocol

Lectures, seminars, in class activities, guest lectures, videos and on line assignments will all be utilized. Class participation is expected. You will be evaluated in part based upon your contributions to class discussions. It is essential that you come prepared to participate so keep up with the reading and plan to speak up.

Attendance is imperative for success in this class. Hands-on activities will be conducted during class time, so if you cannot make it to class, you will miss the activities and lose the associated points.

Cell phone and laptop use is not permitted during class. Users will be asked to leave.

## Assignments and Grading Policy

1. Research Grant Application to NSF, NIH or NIJ (50%): prepare a literature review, research proposal, budget and all required documents for a research grant application (see <http://www.nij.gov/nij/funding/fellowships/welcome.htm> for an example) on an approved forensic DNA related topic. (LO1, LO2, LO3, LO4, LO5)
2. Presentation (30%): a formal class presentation of the forensic DNA research proposal topic, including topic outline and reference page. (LO1, LO2, LO3, LO4). Also, as a part of this assignment, students will prepare a formal abstract (AAFS format).
3. Participation (20%): come to class prepared to discuss and critique assigned readings; participate in all in-class and out-of-class assignments. (LO2, LO3, LO4)

### Course requirements and Grading:

# Participation- 20%

A significant portion of the course grade is based on class participation, therefore, it is essential that students keep up with the reading, complete all assignments and are active class participants. Readings will include journal articles, chapters from the required textbook, on-line resources and publications and materials, original publications and proposals by the instructor.

Each week, **one to** **two students selected randomly (depending on class size) will be responsible for leading the discussion** of that week’s reading or topic. Every week you will be graded on your participation. 5 points will be awarded to students who participate fully each week including leading the discussion if it is your week, being on time, providing several comments and questions during the seminar and on occasion, bringing to light additional information and references relevant to the topic. “Moderate” participation (a few comments or questions made, or students who participate considerably, but arrive more than 15 minutes late or leave more than 15 minutes early) will be awarded 3-4 points. Minimal participation will be awarded 1-2 points. Students who are completely silent or are absent will receive no participation points. These will be tabulated and averaged for your final participation grade. **Note that, it is also important that you be able to discuss chapter and reading contents beyond what you have written in the TCIs and DQs (see next section).**

**Research Grant Application (50%)**:

A single NIH, NSF, or NIJ research grant application for this course is required and is worth 50% of your grade. Each paper should be approximately 15 pages of text (no more than 20), typed and double-spaced, in 12-point font and black ink, with standard 1-inch margins and references in APA style. . Students must hand in original papers for this class. Copies of papers completed in previous classes, or papers largely adapted from previous classes, are unacceptable and, if submitted, will be considered a violation of academic integrity. This will result in severe consequences that may include failing the paper, failing the course and expulsion from SJSU. You will be required to upload your paper to [www.turnitin.com](http://www.turnitin.com).

The guidelines for the research grant application can be found at NSF, NIH and NIJ websites: See

NSF

<http://www.nsf.gov/pubs/2011/nsf11582/nsf11582.htm>

<http://www.nsfgrfp.org/>

NIH

<http://grants.nih.gov/grants/funding/424/SF424_RR_Guide_Fellowship_VerB.pdf>

<http://deainfo.nci.nih.gov/extra/extdocs/gntapp.pdf>

<http://www.niaid.nih.gov/researchfunding/sop/Pages/f.aspx>

NIJ

<http://www.nij.gov/nij/funding/fellowships/graduate-research-fellowship/faqs.htm#programnarrative>

**Note on research grant paper formats and grading**: page numbering begins on the first page of text (your cover page, if you use one, is not page 1, and your bibliography does not count as a page of text). Papers which are too short or too long, including papers using 1.5 or triple spacing instead of double spacing, will be penalized.

Grading. Grading of the research grant application will follow the granting agency guidelines and will evaluate the completeness and quality of the literature review, intellectual and technical merit of the approach proposed as well as the broader implications for the research proposed. Criteria for grading are also available at the NSF, NIH and NIJ websites. See <http://www.nsfgrfp.org/how_to_apply/review_criteria> as an example below:

1. [**Intellectual Merit**](http://www.nsfgrfp.org/how_to_apply/review_criteria#merit)
   1. How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields?
   2. How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of prior work.)
   3. To what extent does the proposed activity suggest and explore creative, original, or potentially transformative concepts?
   4. How well conceived and organized is the proposed activity?
   5. Is there sufficient access to resources?

1. [**Broader Impacts**](http://www.nsfgrfp.org/how_to_apply/review_criteria#impacts)\* – Activities and projects that:
   1. How well does the activity advance discovery and understanding while promoting teaching, training, and learning?
   2. How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)?
   3. To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships?
   4. Will the results be disseminated broadly to enhance scientific and technological understanding?
   5. What may be the benefits of the proposed activity to society?

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**Presentations (30%):** You will give a 15-30-minute presentation to the class on your research proposal, and distribute a one-page outline with a summary to the rest of the class and the instructor. Your written summary should be in narrative form, and may be single-spaced if you choose. Summaries should have citations (minimum of 2 with at least 1 from the last year-2012). In addition, you will be required to write an abstract in the AAFS format.

Use 12-point font or larger for your summaries, and be sure to include your name and topic. In addition, one week before, you must submit a reference by email to Lee for the entire class on your topic. The length of your presentations will depend on the number of students enrolled in the class, but plan at least 30 minutes and allow time for questions. Please practice your presentations: you need to cover your main points clearly and concisely, and you will be cut off if you talk for too long. Thus, to get a good grade for your presentation, you can’t “wing it”. You will be expected to deliver Power Point displays. Students will be expected to provide oral critiques of the summary and presentations.

A total of 10 points may be granted for additional extra credit small group assignments and other assignments during the semester. Each assignment will be worth 1-2 points each. These extra credit points may be used to augment your final point total.

No work will be accepted after the due date. Please adhere to all stipulated due dates which have been established in order to facilitate grading. If you are in any doubt about due dates and times please check with the instructor.

Grading Scale for All Assignments:

Letter: Percentage:

A+ 97-100

A 94-96

1. 90-93

B+ 87-89

B 84-86

B- 80-83

C+ 77-79

C 74-76

NF < 74

## Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drops, academic renewal, etc. Information on add/drops are available at <http://www.sjsu.edu/advising/faq/index.htm#add>. Information about late drop is available at <http://www.sjsu.edu/aars/policies/latedrops/>. Students should be aware of the current deadlines and penalties for adding and dropping classes.

**JUSTICE STUDIES READING AND WRITING PHILOSOPHY**

The Department of Justice Studies is committed to scholarly excellence. Therefore, the Department promotes academic, critical, and creative engagement with language (i.e., reading and writing) throughout its curriculum. A sustained and intensive exploration of language prepares students to think critically and to act meaningfully in interrelated areas of their lives–personal, professional, economic, social, political, ethical, and cultural. Graduates of the Department of Justice Studies leave San José State University prepared to enter a range of careers and for advanced study in a variety of fields; they are prepared to more effectively identify and ameliorate injustice in their personal, professional and civic lives. Indeed, the impact of literacy is evident not only within the span of a specific course, semester, or academic program but also over the span of a lifetime.

## University Policies

### Academic integrity

Students should know the University’s Student Conduct Code, available at <http://www.sjsu.edu/studentconduct/docs/Student_Conduct_Code.pdf>. Your own commitment to learning, as evidenced by your enrollment at San Jose State University and the University’s integrity policy, require you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development, found at <http://www.sjsu.edu/studentconduct>.   
Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person’s ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include in your assignment any material you have submitted, or plan to submit for another class, please note that SJSU’s Academic Policy F06-1 requires approval of instructors.

### Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with the DRC (Disability Resource Center) to establish a record of their disability.

## Student Technology Resources (Optional)

Computer labs for student use are available in the Academic Success Center located on the 1st floor of Clark Hall and on the 2nd floor of the Student Union. Additional computer labs may be available in your department/college. Computers are also available in the Martin Luther King Library.  
A wide variety of audio-visual equipment is available for student checkout from Media Services located in IRC 112. These items include digital and VHS camcorders, VHS and Beta video players, 16 mm, slide, overhead, DVD, CD, and audiotape players, sound systems, wireless microphones, projection screens and monitors.

## Learning Assistance Resource Center (Optional)

The Learning Assistance Resource Center (LARC) is located in Room 600 in the Student Services Center. It is designed to assist students in the development of their full academic potential and to motivate them to become self-directed learners. The center provides support services, such as skills assessment, individual or group tutorials, subject advising, learning assistance, summer academic preparation and basic skills development. The LARC website is located at [http:/www.sjsu.edu/larc](http://www.sjsu.edu/larc/).

## SJSU Writing Center (Optional)

The SJSU Writing Center is located in Room 126 in Clark Hall.  It is staffed by professional instructors and upper-division or graduate-level writing specialists from each of the seven SJSU colleges. Our writing specialists have met a rigorous GPA requirement, and they are well trained to assist all students at all levels within all disciplines to become better writers. The Writing Center website is located at <http://www.sjsu.edu/writingcenter>.

## Peer Mentor Center (Optional)

The Peer Mentor Center is located on the 1st floor of Clark Hall in the Academic Success Center. The Peer Mentor Center is staffed with Peer Mentors who excel in helping students manage university life, tackling problems that range from academic challenges to interpersonal struggles. On the road to graduation, Peer Mentors are navigators, offering “roadside assistance” to peers who feel a bit lost or simply need help mapping out the locations of campus resources. Peer Mentor services are free and available on a drop –in basis, no reservation required. The Peer Mentor Center website is located at [http://www.sjsu.edu/muse/peermentor](http://www.sjsu.edu/muse/peermentor/).  
  
**CASA Student Success Center**  
The Student Success Center in the College of Applied Sciences and Arts (CASA) provides advising for undergraduate students majoring or wanting to major in programs offered in CASA Departments and Schools.  
All CASA students and students who would like to be in CASA are invited to stop by the Center for general education advising, help with changing majors, academic policy related questions, meeting with peer advisors, and/or attending various regularly scheduled presentations and workshops. Looking for academic advice or maybe just some tips about how to navigate your way around SJSU? Check out the CASA Student Success Center! It’s also a great place to study, and you can check out laptops. Location: MacQuarrie Hall (MH) 533 - top floor of MacQuarrie Hall. Contact information: [408.924.2910](about:blank). Website: <http://www.sjsu.edu/casa/ssc/> more information.

# JS 160 Special Topics in Forensic Science, Advances in Forensic DNA

# Fall 2012 Course Schedule

Schedule is subject to change with fair notice via email and there may be additional assignments

Table 1 Course Schedule

| Week | Date | Topics, Readings, Assignments, Deadlines |
| --- | --- | --- |
| 1 | 08/22/12 | **Introduction and Overview**  Introductions, Overview, Team Formation, Lee Website Review, Readings Posted on Website: <http://www.sjsu.edu/people/steven.lee/>  Sign up for Student-Led Discussions, 2-Student Leads Per Article  Review of Course Requirements (focus on paper), Library Research of Specific Topic, Library Tour if Available, Readings Posted on Website: <http://www.sjsu.edu/people/steven.lee/>  Review of Forensic DNA: Introduction to Resources: BrightTalk Website and other on line reference sites to search topics  **Assignments**  **Webcast**- Watch the following webcast  NCSTL- The National Clearinghouse for Science, Technology & the Law  <http://www.brighttalk.com/community/forensic-science/webcast/113/2515>  **Journal Article**  Read the following article and write a 250 word summary with 3 discussion questions and 3 answers to your questions (approx. 100 words per question)- Email your summary, questions and answers in a single word document to [sblee999@gmail.com](mailto:sblee999@gmail.com) by 1200 noon the sunday before class (for this assignment it will be due 08/28/12 at 1200).  Kayser M and de Knijff P (2011)  Improving human forensics through advances in genetics, genomics and molecular biology Nature Reviews Genetics, 12:179-192 |
| 2 | 08/29/12 | **STRs, Mini STRs, Y STRs, mtDNA**  Review of NCSTL webcast and Kayser article- Team Discussion  Open discussion – student led  Student lead 1  Student lead 2  **Assignments-**  Webcast- Watch the following 3 webcasts  Forensic DNA: STR, MiniSTR, Y-STR or mtDNA?  http://www.brighttalk.com/community/forensic-science/webcast/113/4027  Y-STR and Forensic Identification  http://www.brighttalk.com/community/forensic-science/webcast/113/1639  Mitochondrial DNA and Forensic Identification  <http://www.brighttalk.com/community/forensic-science/webcast/113/968>  Read the following 3 articles and write a 250 word summary with 3 discussion questions and 3 answers to your questions (approx. 100 words per question)- Email your summary, questions and answers in a single word document for each article (so you will be writing 3 summaries and 9 questions) to [sblee999@gmail.com](mailto:sblee999@gmail.com) by 1200 noon the sunday before class (for this assignment it will be due 09/04/12 at 1200).  1)Butler, J.M. and Hill, C.R. (2012) Biology and genetics of new autosomal STR loci useful for forensic DNA analysis. [*Forensic Sci. Rev.* 24(1): 15-26](http://www.cstl.nist.gov/div831/strbase/pub_pres/Butler-Hill-FSR2012-newSTRloci.pdf).  2) Ballantyne KN, Goedbloed M, Fang R, Schaap O, Lao O, Wollstein A, Choi Y, van Duijn K, Vermeulen M, Brauer S, Decorte R, Poetsch M, von Wurmb-Schwark N, de Knijff O, Labuda D, Vézina H, Knoblauch H, Lessig R, Roewer L, Ploski R, Dobosz T, Henke L, Henke J, Furtado MR, and Kayser M (2010) Mutability of Y-chromosomal microsatellites: rates, characteristics, molecular bases and forensic implications American Journal of Human Genetics, 87:341–353  3).Forensic mitochondrial DNA analysis: current practices and future potentials, T Melton, C Holland, M Holland (2012) Forensic Science Review, 24, pp. 101-22 |
| 3 | 09/05/12 | **Low template, Degradation, Quantification**  Review of webcasts and 3 articles- Team Discussion  Open discussion – student lead  STRs, mini STRs  Student lead 3  Student lead 4  Y STRs  Student lead 5  Student lead 6  mtDNA  Student lead 7  Student lead 8  **Assignments**  Webcast- Watch the following 4 webcasts  **Low copy number (LCN) DNA profiling**  [**http://www.brighttalk.com/community/forensic-science/webcast/113/823**](http://www.brighttalk.com/community/forensic-science/webcast/113/823) [A “short” review of mini-STRs](http://www.brighttalk.com/community/forensic-science/webcast/113/730)<http://www.brighttalk.com/community/forensic-science/webcast/113/730> Increasing probative value of degraded or limited DNA evidence<http://www.brighttalk.com/community/forensic-science/webcast/113/737>Run-specific limits of quantitation and detection<http://www.brighttalk.com/community/forensic-science/webcast/113/593> Reading- Read the following 7 articles:  Schneider, P.M., Butler, J.M., Carracedo, A. (2011) Publications and letters related to the forensic genetic analysis of low amounts of DNA. *Forensic Sci. Int. Genet.* 5: 1-2.  Butler, J.M. and Hill, C.R. (2010) Scientific issues with analysis of low amounts of DNA. [*Profiles in DNA (Promega)*, 13(1)](http://www.promega.com/profiles/1301/1301_02.html). Available at <http://www.promega.com/profiles/>.  \*\*\*Budowle B, van Daal A (2011) Comment on "A universal strategy to interpret DNA profiles that does not require a definition of low copy number" by Peter Gill and John Buckleton, 2010 Forensic Sci Int Genet 4, 221-227. Forensic Sci. Int. Genetics Jan;5(1):15. Epub Jun 8  Budowle B, van Daal A. (2010) Reply to Comments by Buckleton and Gill on "Low copy number typing has yet to achieve 'general acceptance"' by Budowle, B., et al., 2009. Forensic Sci. Int.: Genet. Suppl. Series 2, 551-552 Forensic Sci Int Genet. 2010 Sep 17  Budowle B, Eisenberg AJ, van Daal A. Forensic Sci Int Genet. 2010 Apr 18. Response to Comment on "Low copy number typing has yet to achieve "general acceptance"" (Budowle et al., 2009. Forensic Sci. Int. Genetics: Supplement Series 2, 551-552 by Theresa Caragine, Mechthild Prinz.  Budowle B, Eisenberg AJ, van Daal A. (2010) Concerns about low copy number typing  Forensic Sci Int Genet. 2010 Apr Budowle B, Eisenberg AJ, van Daal A. (2010) Concerns about low copy number typing. Forensic Sci Int Genet. 2010 Apr 18.  Budowle B, van Daal A. (2010) Comment on "A universal strategy to interpret DNA profiles that does not require a definition of low copy number" by Peter Gill and John Buckleton, 2010, Forensic Sci. Int. Genetics 4, 221-227. Forensic Sci Int Genet. Jun 8  \*\*\* Gill P, Buckleton J. 2010. A universal strategy to interpret DNA profiles that does not require a definition of low-copy-number.Forensic Sci Int Genet. 2010 Jul;4(4):221-7. Epub 2009 Oct 9.  \*\*\* Write summaries on these 2 articles |
| 3 | 09/12/12 | **Guest Speaker- Dr. Nader Pourmand UCSC- Advanced Forensic DNA Technologies**  **Other course topics SNPs and Phenotype profiling**  Review of webcasts and 2 articles- Team Discussion  Open discussion – student lead  Low template webcasts  Student lead 9  Student lead 10  Limits of Quant webcast  Student lead 11  Student lead 12  Budowle van Daal vs Gill and Buckleton  Student lead 13  Student lead 14  Student lead 15  **Assignments**  Webcast- Watch the following 2 webcasts [DNAWitness Forensics and Cold Cases](http://www.brighttalk.com/community/forensic-science/webcast/214/753) [**http://www.brighttalk.com/community/forensic-science/webcast/214/753**](http://www.brighttalk.com/community/forensic-science/webcast/214/753) [Overview of DNAWitness and Case Histories](http://www.brighttalk.com/community/forensic-science/webcast/113/602) **http://www.brighttalk.com/community/forensic-science/webcast/113/602**  **Reading**  \*\*\*Walsh S, Liu F, Ballantyne K, van Oven M, Lao O, Kayser M (2011)  IrisPlex: a sensitive DNA tool for accurate prediction of blue and brown eye colour in the absence of ancestry information  Forensic Science International: Genetics, 5:170-180  \*\*\*Branicki W, Liu F, van Duijn K, Draus-Barini J, Pośpiech E, Walsh S, Kupiec T, Wojas-Pelc A, and Kayser M (2011)  Model-based prediction of human hair color using DNA variants  Human Genetics, Epub Jan 4 2011, DOI 10.1007/s00439-010-0939-8  Zubakov D, Liu F, van Zelm MC, Vermeulen J, Oostra BA, van Duijn CM, Driessen GJ, van Dongen JJM, Kayser M\*, Langerak AW\* (2010)  \*\*\*Estimating human age from T cell DNA rearrangements  Current Biology, 20(22):R970  Liu F, Wollstein A, Hysi PG, Ankra-Badu GA, Spector TD, Park D, Zhu G, Larsson M, Duffy DL, Montgomery GW, Mackey DA, Walsh S, Lao O, Hofman A, Rivadeneira F, Vingerling JR, Uitterlinden AG, Martin NG, Hammond CJ, and Kayser M (2010)  Digital quantification of human eye color highlights genetic association of three new loci PLoS Genetics, 6 (5):e1000934  Liu F, van Duijn K, Vingerling JR, Hofman A, Uitterlinden AG, Janssens ACJW, and Kayser M (2009)  Eye color and the prediction of complex phenotypes from genotypes  Current Biology, 19 (5):R192-R193  Creating a Working Bibliography for Research – Primary and Secondary Sources Research Topics and reference due. |
| 4 | 09/19/12 | **Presentation Basics- Abstract basics- Body fluid and mRNA applications**  Review of webcasts and 3 articles- Team Discussion  Open discussion – student lead  Student lead 15  Student lead 16  Presentation basics and abstract writing- visit [www.aafs.org](http://www.aafs.org) for examples  Presentation Basics -- Content, Figures, Citations, Professionalis  Final Research Topics Due  **Assignments**  Webcast- Watch the following webcasts  [**Body Fluid Identification by RNA Expression Profiling**](http://www.brighttalk.com/community/forensic-science/webcast/113/3977)  <http://www.brighttalk.com/community/forensic-science/webcast/113/3977> **Estimation of the Time of Deposition of Bloodstains** <http://www.brighttalk.com/community/forensic-science/webcast/113/1460> Read the following articles  mRNA Profiling for Body Fluid Identification by Multiplex Quantitative RT-PCR. Juusola, J. and Ballantyne J. J. Forensic Sci 52 (6) 1252-1262 (2007  Identification of Forensically Relevant Body Fluids Using a Panel of Differentially Expressed microRNAs. Hanson, E.K. and Ballantyne, J. Anal Biochem 387 303-314 (2009)  Write summaries and questions for both. |
| 5 | 09/26/12 | **Guest Speaker- Dr. John Tonkyn- CA DOJ DNA Laboratory- Missing Persons Databases**  Review of webcasts and 2 articles- Team Discussion  Open discussion  Distribution and review of Research Presentation Evaluation Criteria  Final research topics due. |
| 6 | 10/03/12 | **Guest Speaker- Dr. Charles Brenner- DNA View- Forensic Mathematician Topic TBD** |
| 7 | 10/10/12 | **Guest Lecturer- Rockne Harmon – Former Sr. DA Alameda County- Topic TBD** |
| 8 | 10/17/12 | On line video and webcast TBD Lee at ISHI |
| 9 | 10/24/12 | Individual Topic Meetings (6-8 per day- Note, via telcon/skype)  1 5  2 6  3 7  4 8 |
| 10 | 10/31/12 | Individual Topic Meetings (6-8 per day- Note, via telcon/skype)  1 5  2 6  3 7  4 8 |
| 11 | 11/07/12 | On line video and webcast TBD Lee at CAC |
| 12 | 11/14/12 | Individual Topics meetings (6-8 per day- Note, via telcon/skype)  1 5  2 6  3 7 (Lee Innocence project testimony)  4 8 |
| 13 | 11/21/12 | Paper Presentations (6-8 per day) |
| 14 | 11/28/12 | Paper Presentations (6-8 per day) |
| 15 | 12/05/12 | Last Class Paper Presentations (6-8 per day)  All Final Research Grant Papers Due 12/10/12 |

**FS 160 Additional webcasts and readings**

**The 2009 Report on Forensic Sciences from the National Academies**

<http://www.brighttalk.com/community/forensic-science/webcast/113/2385>

**Ethics workshop- All presentations**

<http://www.ncstl.org/education/Ethics%20Workshop>

**Robin Bowen:** [Webcast](http://gpiis03.law.stetson.edu/Media/On-Demand/ncstl_2009/bowen.wmv" \t "blank) and [PowerPoint Presentation](http://www.ncstl.org/files/IAFS%20Ethics%20Workshop/IAFS%20RB.ppt" \t "blank)   
**Jamie Downs:** [Webcast](http://gpiis03.law.stetson.edu/Media/On-Demand/ncstl_2009/downs.wmv" \t "blank) and [PowerPoint Presentation](http://www.ncstl.org/files/IAFS%20Ethics%20Workshop/IAFS%20JD.ppt" \t "blank)   
**Michael Welner:** [Webcast](http://gpiis03.law.stetson.edu/Media/On-Demand/ncstl_2009/weiner.wmv" \t "blank) and [PowerPoint Presentation](http://www.ncstl.org/files/IAFS%20Ethics%20Workshop/IAFS%20MW.ppt" \t "blank)   
**Haskell M. Pitluck:** [Webcast](http://gpiis03.law.stetson.edu/Media/On-Demand/ncstl_2009/pitluck.wmv" \t "blank) and [PowerPoint Presentation](http://www.ncstl.org/files/IAFS%20Ethics%20Workshop/IAFS%20HP.ppt" \t "blank)   
**Richard Vorder Bruegge:** [Webcast](http://gpiis03.law.stetson.edu/Media/On-Demand/ncstl_2009/vorderbruegge.wmv" \t "blank)

### [DNA in the Courtroom - Current Issues](http://www.brighttalk.com/community/forensic-science/webcast/113/1660)

<http://www.brighttalk.com/community/forensic-science/webcast/113/1660>

[**Body Fluid Identification by RNA Expression Profiling**](http://www.brighttalk.com/community/forensic-science/webcast/113/3977)

<http://www.brighttalk.com/community/forensic-science/webcast/113/3977>

### Estimation of the Time of Deposition of Bloodstains

### <http://www.brighttalk.com/community/forensic-science/webcast/113/1460>

### [Forensic DNA: STR, MiniSTR, Y-STR or mtDNA?](http://www.brighttalk.com/community/forensic-science/webcast/113/4027)

### <http://www.brighttalk.com/community/forensic-science/webcast/113/4027>

### Y-STR and Forensic Identification

### <http://www.brighttalk.com/community/forensic-science/webcast/113/1639>

### [Mitochondrial DNA and Forensic Identification](http://www.brighttalk.com/community/forensic-science/webcast/113/968)

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### [Generic Microfluidic Platform for Ultrafast Forensic DNA Analysis](http://www.brighttalk.com/community/forensic-science/webcast/113/1752)

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### [DNA and the Duke Lacrosse Case - The Blue Devils in the Details](http://www.brighttalk.com/community/forensic-science/webcast/113/1262)

[**http://www.brighttalk.com/community/forensic-science/webcast/113/1262**](http://www.brighttalk.com/community/forensic-science/webcast/113/1262)

**Low copy number (LCN) DNA profiling**

[**http://www.brighttalk.com/community/forensic-science/webcast/113/823**](http://www.brighttalk.com/community/forensic-science/webcast/113/823)

### [A “short” review of mini-STRs](http://www.brighttalk.com/community/forensic-science/webcast/113/730)

### <http://www.brighttalk.com/community/forensic-science/webcast/113/730>

### Increasing probative value of degraded or limited DNA evidence

### <http://www.brighttalk.com/community/forensic-science/webcast/113/737>

### [DNAWitness Forensics and Cold Cases](http://www.brighttalk.com/community/forensic-science/webcast/214/753)

[**http://www.brighttalk.com/community/forensic-science/webcast/214/753**](http://www.brighttalk.com/community/forensic-science/webcast/214/753)

### [Overview of DNAWitness and Case Histories](http://www.brighttalk.com/community/forensic-science/webcast/113/602)

**http://www.brighttalk.com/community/forensic-science/webcast/113/602**

### Run-specific limits of quantitation and detection

### <http://www.brighttalk.com/community/forensic-science/webcast/113/593>

### [Inferring the number of contributors to mixed DNA samples](http://www.brighttalk.com/community/forensic-science/webcast/113/688)

### <http://www.brighttalk.com/community/forensic-science/webcast/113/688>

### [Sequential unmasking: making DNA profiling more objective](http://www.brighttalk.com/community/forensic-science/webcast/113/645)

### <http://www.brighttalk.com/community/forensic-science/webcast/113/645>

### Familial searches and cold hit statistics

### <http://www.brighttalk.com/community/forensic-science/webcast/113/725>

### [Bayesian Bias in Forensic Science](http://www.brighttalk.com/community/forensic-science/webcast/113/735)

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### [Ultra-Violet & Infrared Capture of Crime Scene Evidence](http://www.brighttalk.com/community/forensic-science/webcast/113/749)

**http://www.brighttalk.com/community/forensic-science/webcast/113/749**

<http://www.ncstl.org/education/NCSTL%20Conferences>

**National Conference for Science, Technology and the Law 2006**   
November 2-5, 2006 at the Renaissance Vinoy Resort, St. Peterburg, Florida

**Topics included:**

* Intra and Interstate Tracking of Sexual Predators
* DUI Standards
* Presenting Forensic Evidence in Court
* Principles of Forensic DNA for Officers of the Court
* Identity Theft
* The Warren Jeffs Case
* Forensic Psychology
* Science, Law and Law Enforcement of Methamphetamine
* Biogeographical Ancestry Prediction based on DNA
* Legal Update: Fingerprint Evidence
* Weird Science and Faux-n-sics
* Less Lethal Devices
* Case Law Update
* Technology, Research and Education

[Conference video segments and candids](http://gpiis03.law.stetson.edu/media/producer/ncstl2006/ncstlproducer.htm" \t "blank), [Conference Agenda](http://www.ncstl.org/picture/258), [Program Abstracts](http://www.ncstl.org/picture/256), [Presenter Bios](http://www.ncstl.org/picture/257),[Conference Co-sponsors](http://www.ncstl.org/picture/259), [Conference Bibliographies](http://www.ncstl.org/education/2006%20Conference%20Bibliographies).   
**Presenter handouts**: [John H. Cunha, Jr.](http://www.ncstl.org/picture/252), [Michael C. Delgadillo: The Three Determinations of a DRE](http://www.ncstl.org/picture/253),[Glenn Langenburg](http://www.ncstl.org/picture/254), [Glenn Langenburg](http://www.ncstl.org/picture/255).   
**Presenter PowerPoints**:

* Dr. Jack Ballantyne: [The Determination of Physical Feathers of the Donor of a Crime Scene Sample](http://www.ncstl.org/picture/220)
* Sue Ballou: [Biogeographical Ancestry Prediction Based on DNA (SNPs) for Investigative Leads](http://www.ncstl.org/picture/222)
* Dr. William P. Bozeman: [Medical Safety Update Less Lethal Weapons/Conducted Energy Devices (CED)](http://www.ncstl.org/picture/221)
* John H. Cunha, Jr.: [Latent Fingerprints](http://www.ncstl.org/picture/223) and [#2](http://www.ncstl.org/picture/249)
* Richard W. Downing: [Federal Identity Theft Investigations](http://www.ncstl.org/picture/226)
* Dr. J.C. Upshaw Downs: [Less Than Lethal Force: A Medical Examiner's View](http://www.ncstl.org/picture/225)
* Dr. Ken Furton: [Forensic Evidence Case Law Developments: Canines in Court](http://www.ncstl.org/picture/219)
* Paul Gianelli: [Recent Developments](http://www.ncstl.org/picture/227)
* Rockne P. Harmon: [DNA-Based Ancestry Prediction](http://www.ncstl.org/picture/228)
* Cynthia Holt: [Wikis, Blogs, and More: New Keys That Unlock New Possibilities](http://www.ncstl.org/picture/224)
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* Stephen B. Meagher: [Latent Prints: Aftermath from Mayfield Erroneous Identification](http://www.ncstl.org/picture/232) and[Fingerprints: Science and the Law](http://www.ncstl.org/files/files1/NCSTL%20Conf%20Docs/meagher_2.pps)
* Dr. Dana Hunt, Dr. John Carnevale, Sheryl Rabin, Walter Rodriguez, Mark Evans: [MethPanel - Science, Law and Law Enforcement of Methamphetamine](http://www.ncstl.org/files/files1/NCSTL%20Conf%20Docs/Meth%20Panel%20NCSTL%20Nov%2006.ppt)
* John Morgan: [Presentation](http://www.ncstl.org/files/files1/NCSTL%20Conf%20Docs/Presentation1JohnMorganThursday.ppt)
* Rick W. Smith: [TASER Non-Lethal Weapons: Safety Data & Field Results](http://www.ncstl.org/picture/282) and [Taser Video](http://www.ncstl.org/picture/283)and [Taser Video](http://www.ncstl.org/picture/285) and [Ultrasound Video](http://www.ncstl.org/picture/286)
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