

## DNA Mixture Interpretation



### The DNA Community Experience

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## Best Practices in DNA Mixture Interpretation

- Two equally important parts to this process must be addressed
  - 1) Establish best practices within your own DNA laboratory
  - 2) Establish best practices within the DNA community



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## Change Management

- Change is a process and must be managed to succeed
- “Leading Change” by John P. Kotter
  - Eight stages of change
  - Each stage is essential
  - Mistakes at any stage can result in failure
  - Takes years



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## Change Management

- Universal Concept
  - Primarily focused on change within a single agency, company, or team
  - The same principles of change management are also applicable to a community
  - We will review change management in regards to the evolution of DNA mixture interpretation




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## Change Management

- Other community wide changes in forensic science could benefit from such an approach
  - Implementation of Rapid DNA methods
  - Implementation of improved analysis methods in the Pattern Evidence disciplines
  - Implementation of mandatory certification of all forensic scientists




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## Stage 1

### Establish a Sense of Urgency

- Step 1 - Bring the outside in
  - Embrace the statistics community
  - Embrace the international community
  - Embrace the naysayer's
- Step 2 - Behave with urgency every day
  - Recognize your own issues
  - Be proactive and respond to guidelines
  - Don't wait for a crisis




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**Stage 1**  
**Establish a Sense of Urgency**

- Step 3 - Find opportunities in crisis
  - Where we find ourselves right now
  - Need to evaluate and respond strategically
  - This workshop can be the starting point
- Step 4 - Deal with no-no's
  - Some don't want to deal with it (stubborn)
  - Some don't know better (embarrassed)
  - Some don't want past exposed (fearful)




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**Stage 2**  
**Form a Powerful Guiding Coalition**

- Who is in charge?
  - SWGDAM
  - ASCLD
  - AAFS
  - IWG's
  - Vendors
- National Commission on Forensic Science
  - Others must acknowledge NCFS as authority




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**Stage 3**  
**Create a Vision**

- There needs to be a singular vision from a singular authority
- The vision must account for the entire community
  - Ensure fundamental understanding by all DNA examiners
  - Ensure compliance with existing guidelines by all DNA laboratories
  - Ensure appropriate transition to DNA mixture tools




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**Stage 4**  
**Communicate the Vision**

- The vision must start at the top and be communicated down by the authority

NCFS

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ASCLD / AAFS / SWGDAM / OSAC

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Lab Directors

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Forensic Scientists




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**Stage 5**  
**Empower Others to Act on the Vision**

- Must address different needs of different players
  - New staff being taught for the first time
  - Experienced staff being taught new info
- Provide universal resources
  - Education and instruction
  - Validation and SOP guidance
  - Expert review and follow-up




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**Stage 6**  
**Plan for and Create Short-Term Wins**

- NCFS should establish objectives
  - Identify DNA Mixture experts
  - Secure the experts
  - Establish program to create more experts
  - Assign the experts to the labs
  - Ensure compliance lab by lab




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**Stage 7**  
**Consolidate Improvements and Produce More Change**

- Reach for the tipping point
  - Keep track of each lab’s success
  - Promote each lab’s success
  - Soon the majority of labs will be in compliance and will be seen as the norm
  - The remaining labs will quickly follow until all labs are in compliance with DNA mixture interpretation best practices




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**Stage 8**  
**Institutionalize New Approaches**

- Ensure that the change is permanent
  - Future training of new scientists should include the history of these changes
  - Establish champions of the changes in the next generation of leadership
- Be prepared for future changes
  - DNA mixture tools will continue to evolve and efforts need to continue to ensure community-wide standards




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**Questions???**




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