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# LATEST IN BIOMETRIC TECHNOLOGY IN THE SERVICE OF TRAVEL SECURITY

**Presented By:**

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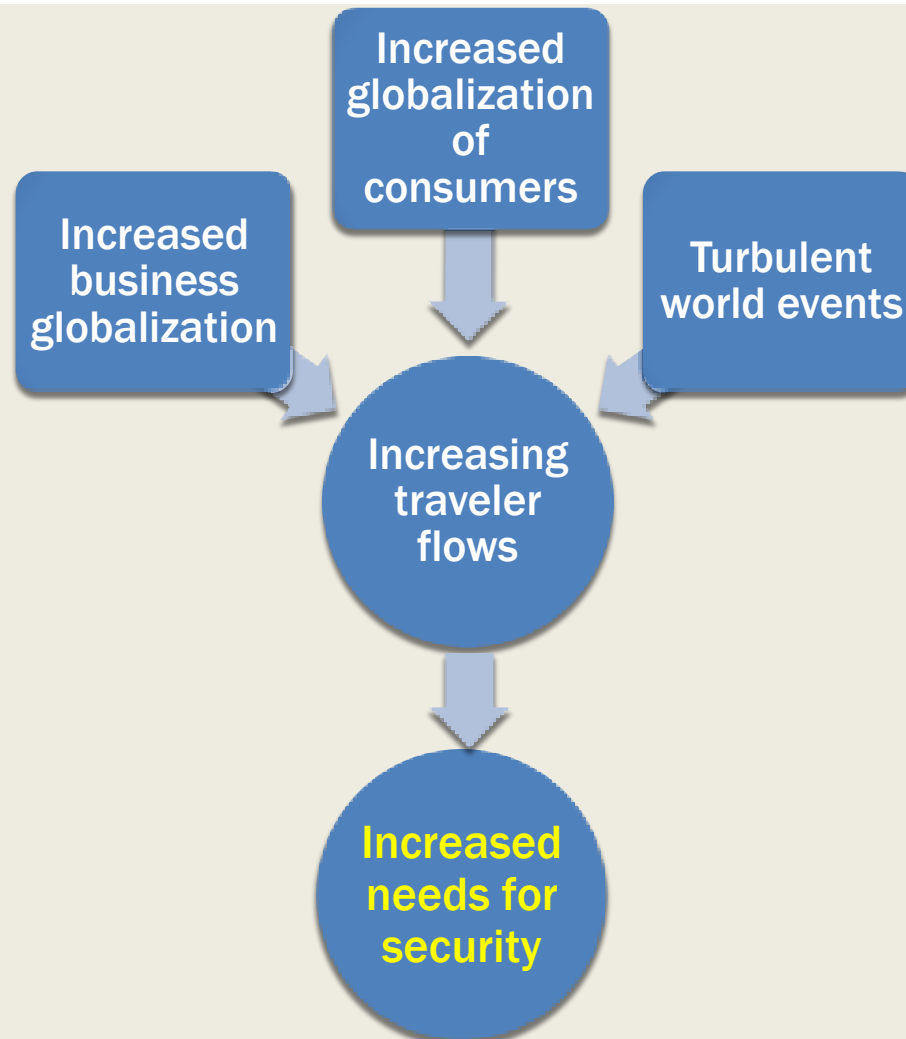


- Research has resulted in 40 peer-reviewed publications that include book chapters, journal articles, and conference proceedings
- Recipient of several prestigious academic awards, including the Barbara S. Stowe Endowed Faculty Development Award and Big 12 Faculty Fellowship Award
- Continues to conduct research in information technology in hospitality/travel and biometric system adoption

# OVERVIEW

- Contemporary travel context
- Overview of biometrics
- Biometrics and travel security
- Concerns
- Recent developments
- Potential challenges
- Conclusions

# CONTEMPORARY TRAVEL CONTEXT



# CONTEMPORARY TRAVEL CONTEXT

- **Solution to security needs: better authentication using biometric systems**
  - **Biometric systems: computerized authentication systems based on biometrics**
  - **Biometrics: characteristics of humans that hardly change**

## Physiological (not controllable)

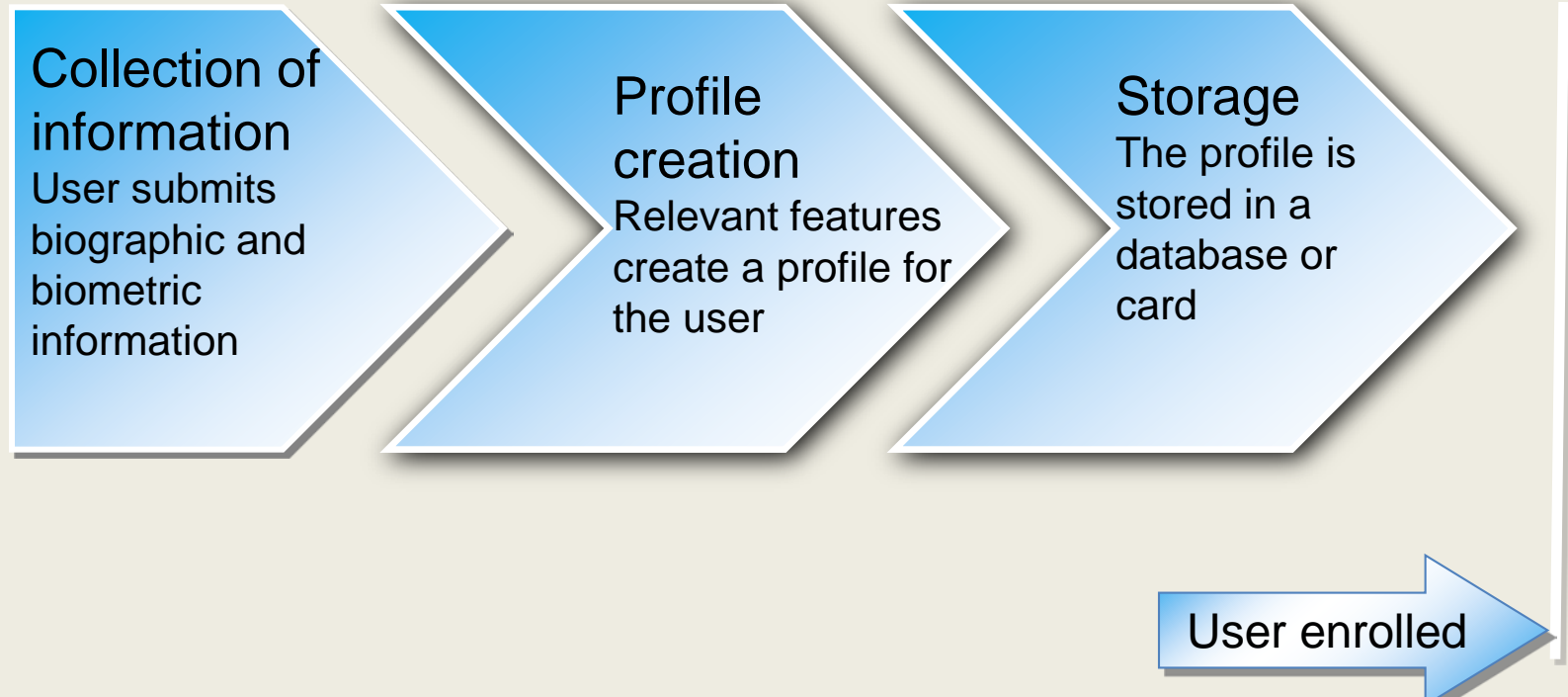
Fingerprint  
Iris  
Retina  
Palm shape  
Vascular patterns

## Behavioral (controllable)

Voice  
Speech  
Gait

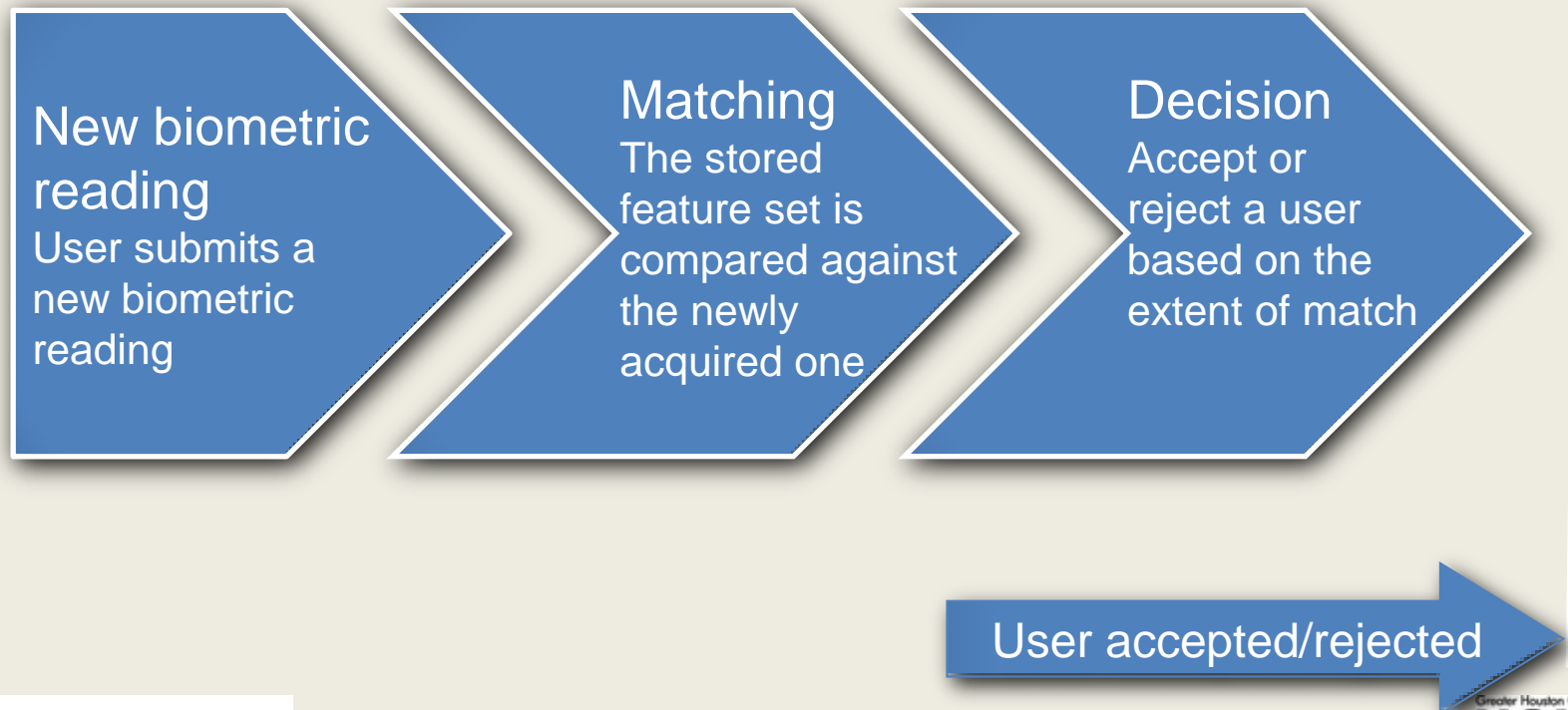
# OVERVIEW OF BIOMETRICS

## Biometric system architecture: enrollment



# OVERVIEW OF BIOMETRICS

## Biometric system architecture: authentication



# BIOMETRICS AND TRAVEL SECURITY

- Identity management systems
- Trusted traveler programs
- Biometric travel documents
- Access systems in hospitality
- Time and attendance management
- Payment/retail systems



# BIOMETRICS AND TRAVEL SECURITY

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- Identity management systems
  - U.S. Visit in the U.S.
  - Similar programs around the world

# BIOMETRICS AND TRAVEL SECURITY

- **Trusted traveler programs**
  - **Global Entry**
  - **Nexus**
  - **PreCheck**
  - **Similar systems in other countries**

# BIOMETRICS AND TRAVEL SECURITY

- Biometric travel documents
  - U.S. biometric passports
  - Global adoption of biometric passports
  - Identity management and personal travel documents

# BIOMETRICS AND TRAVEL SECURITY

- Access systems in hospitality
  - Theme park ticket systems
  - Hotel secure door locks
  - Consumer payment systems

# BIOMETRICS AND TRAVEL SECURITY

- Time and attendance management
  - Biometric time and attendance systems
  - Identity management
- Payment/retail systems

# CONCERNS

- System and data security
- Privacy – data irrevocability
- Fear of physical harm and general user anxiety

# RECENT DEVELOPMENTS

- North America: leader in the biometric technology market
- Biometric system integration
  - Biometrics and mobile technology
  - Integration between biometrics and consumer technology applications (social networking)

# RECENT DEVELOPMENTS

- **Multimodal biometrics in travel**
- **Improvement of the biometric travel document systems**
- **Biometric applications in sectors adjacent to travel**
- **Expansion of consumer-related biometrics**
- **Innovative business models**



# POTENTIAL CHALLENGES

- **Technology restrictions**
- **Matching contemporary biometric with general computing technology**
- **Expectations of biometrics**
- **Traveler flow management**
- **Privacy**

# CONCLUSIONS

- Technology development remains accelerated.
- Integration allows for improvement in the use of biometric systems.
- There is increasing research examining adoption of biometrics.
- Biometric technology remains promising in travel.

Thank you for your time!