• How do individuals’ drinking patterns change over time?
  – Longitudinal panel studies: Long-term changes in consumption over time
  – Measurement burst studies: Day-to-day and long-term changes

• What types of alcohol-related behaviors do college students report?
  – Quantity and frequency
  – Drinking games and pregaming
Trajectory Subgroups

• Research question
  – To what extent does measurement timing affect the identification of alcohol trajectory subgroups?

• Design
  – Longitudinal panel study: NLSY1997

• Alcohol behavior
  – # drinks consumed per month

This project was supported by F31 AA020164.
Subgroups at Week-Level

• Research question
  – What types of alcohol subgroups can be identified at the weekly level, and how do they differ on motivations for drinking?

• Design
  – Measurement burst: Univ. Life Study (Maggs)

• Alcohol behavior
  – Multiple dimensions measured at daily-level and aggregated across a single week

This project was supported by the University Life Study (R01 AA016016) and the PAMT training grant (T32 DA017629).
Behaviors at Daily-Level

• Research question
  – How are drinking games and pregaming unique with respect to behavioral risk, predictors, and consequences?

• Design
  – Measurement burst: Univ. Life Study (Maggs)

• Alcohol behavior
  – Multiple dimensions, including a focus on drinking games and pregaming

This project was supported by the University Life Study (R01 AA016016).
Future Directions

• Submit two manuscripts
• Submit R03 (pregaming & drinking games)
• Future projects
  – Time-varying effect model to examine developmental changes in the salience of risk factors over time

Project content is solely the responsibility of the authors and does not necessarily represent the official views of NIAAA, NIDA, or the National Institutes of Health.
Jacqueline Cox
Human Development and Family Studies

Prevention Mentor: Ed Smith, DPH
Methods Mentor: Donna Coffman, PhD

This project was supported by the PAMT training grant (T32 DA017629) from the National Institute on Drug Abuse.
Sexual Experiences Among South African 8th Graders

- **Virgin**:
  - Coercion unknown
  - Experienced coerced sex
  - Sex ONLY when coerced
  - Attempted coercion, No sex
  - No Sexual Coercion

- **Non-virgin (21%)**:
  - Coercion unknown
  - Experienced coerced sex
  - Sex ONLY when coerced
  - Attempted coercion, No sex
  - No Sexual Coercion
Tactics used by Perpetrator

1. Physical forced
2. Threatened
3. Blackmail
4. Plead
5. Tricked
6. Promised gifts or rewards
7. He/she pressured by their friends
8. Drugged or got them drunk
9. Harrased electronically
10. Perp drinking/using drugs
11. Victim drinking/using drugs
Reasons for Having Sex: From Non-coercive to Coercive

- Love, Pleasure, Desire
- To please partner
- For Status (popularity)
- Feelings of obligation/expectation
- Economic security/Survival Needs
- Psychological Pressure (Begging, pleading)
- Impairment from Alcohol or Drugs
- Blackmail and threats
- Physical Violence

Yet even when sex is consensual, it may or may not be wanted

Sex may be...
- Unwanted
- Ambivalent
- Wanted

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Sara Vasilenko
• Doctoral Candidate in Neuroscience
• Prevention Mentor: Lisa Gatzke-Kopp
• Methods Mentor: Nilam Ram

David DuPuis

This project was supported by the PAMT training grant (T32 DA017629) from the National Institute on Drug Abuse.
Error Related Negativity

• ERN Reflects Performance Monitoring
• Widespread Interest Amongst Psychophysiological Researchers
  – ERN Signal Attenuated in Individuals with Substance Use Disorders, Attention Deficit-Hyperactivity Disorder, Conduct Disorder, and Schizophrenia
  – ERN Signal Amplified in Individuals with Anxiety Disorders, Depression, and an Autism Spectrum Disorder
• Potential Early Risk Marker
Development of ERN

• Developmental Trajectories of the ERN are Unclear
  – Signal Becomes Measurable Much Later Than Behavioral Measures Would Suggest

• Potential Role of Within Person Variability in Signal Latency Unexplored

• Goals
  – Characterize ERN Development by Signal Temporal Stability and Average Signal Strength
  – Assess Rank Order Stability
Study

- PATHs to Success Data
- Non-Intervention Participants (n=239; 64% male; 68% African American; 22% Hispanic; 10% White)
- Neurophysiological Assessments in K, G1, & G2
Data Processing

• Error Related Signaling
  – Conventional ERN
  – Average Signal Strength & Signal Temporal Stability

• Multilevel Growth Models

\[ Y_{ti} = \beta_{0i} + \beta_{1i} Time_{ti} + e_{ti} \]
\[ \beta_{0i} = \gamma_{00} + \gamma_{01} Gender + u_{0i} \]
\[ \beta_{1i} = \gamma_{10} + \gamma_{11} Gender + u_{1i} \]
Results

Table 1. Means and Standard Deviations of Measurements

<table>
<thead>
<tr>
<th>Measurement</th>
<th>M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>6.13 (.41)</td>
</tr>
<tr>
<td>G1</td>
<td>7.21 (.40)</td>
</tr>
<tr>
<td>G2</td>
<td>8.27 (.56)</td>
</tr>
<tr>
<td><strong>ERN</strong></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>-4.86 (3.21)</td>
</tr>
<tr>
<td>G1</td>
<td>-5.54 (3.18)</td>
</tr>
<tr>
<td>G2</td>
<td>-6.54 (3.53)</td>
</tr>
<tr>
<td><strong>Average Signal Strength</strong></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>33.35 (.96)</td>
</tr>
<tr>
<td>G1</td>
<td>33.18 (.93)</td>
</tr>
<tr>
<td>G2</td>
<td>32.92 (1.05)</td>
</tr>
<tr>
<td><strong>Signal Temporal Stability</strong></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>.18 (.07)</td>
</tr>
<tr>
<td>G1</td>
<td>.23 (.09)</td>
</tr>
<tr>
<td>G2</td>
<td>.24 (.10)</td>
</tr>
</tbody>
</table>

Table 2. Pearson Correlations between and ICCs amongst measures from K, G1, and G2 assessments

<table>
<thead>
<tr>
<th></th>
<th>K and G1</th>
<th>K and G2</th>
<th>G1 and G2</th>
<th>ICC</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERN</td>
<td>.04</td>
<td>.24*</td>
<td>.16†</td>
<td>.12</td>
</tr>
<tr>
<td>Average Signal Strength</td>
<td>.70*</td>
<td>.62*</td>
<td>.69*</td>
<td>.58</td>
</tr>
<tr>
<td>Signal Temporal Stability</td>
<td>.01</td>
<td>-.01</td>
<td>.11</td>
<td>.01</td>
</tr>
</tbody>
</table>
Wrap Up

• Future Directions
  – Dissertation Late Summer

• Thank You
  – Lisa Gatzke-Kopp & Nilam Ram
  – PATHs to Success Research Team

• Questions?

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Main areas of research
• Family-based interventions
• Intervention efficacy & effectiveness

Background
• Attendance, engagement related to outcomes
• All aggregated to one score per person

Research project
• RCT- SFP/MSFP
• Strengthening Families Program (SFP) curriculum
  – 7 sessions; 2 hrs each
  – Skills & Topics: understanding parents/youth, communication, peer pressure resistance, good friends, monitoring, using consequences

This project was supported by the PAMT training grant (T32 DA017629) from the National Institute on Drug Abuse.
Study 1 Methods

Engagement over Time

Measures/Occasions

• Engagement
  – 4 items (1-4 scale)
  – Rated for each parent at each session attended
• Family tension/disagreement
  – 1 item (0-3 scale)
  – Rated for each family at each session any member attended
• Records: Mother/Father, SFP/MSFP

Participants

• 309 parents
  – 51.13% MSFP
  – 38.51% fathers
  – 85.68% partnered
  – Attendance M = 4.35 sessions
  – Youth age M = 11.61 years
Study 1 Results

Engagement over Time

Engagement data

Predicted scores

curriculum version
family tension

\[ r = 0.302, \ p < .01 \]

\[
Y_{jit} = \gamma_{000} + \gamma_{100}\text{msfp} + \gamma_{010}\text{father} + \gamma_{020}\text{meanfamtension} + \gamma_{001}\text{time} + \gamma_{101}\text{msfp*time}
+ \gamma_{002}\text{time}^2 + \gamma_{003}\text{varfamtension} + \gamma_{013}\text{varfamtension * meanfamtension}
+ e_{jit} + \nu_{j10} + \nu_{j3}\text{varfamtension} + u_{j00} + u_{j01}\text{time} + u_{j02}\text{time}^2
\]
Self-report Daily Surveys

• Measures/Occasions:
  – During 7 weeks of intervention
  – Engagement
    • 12 items
    • Administered intervention day/once per week
  – Practice
    • Items for all main parent skills, grouped by session introduced
    • Randomly administered two groups of items each day

• Participants:
  – 50 parents consented
  – 35 parents completed valid surveys (M = 22 occasions)
  – Higher-than-average attendance

• Daily parenting experiences
  • Child behavior, parent stress

• Daily measure of outcomes
  • Parenting and family functioning during the intervention
Wrap-up

Future Directions

• Exploring daily data
• Moderators: engagement, fidelity, which sessions attended
• Mediators: parenting $\rightarrow$ child

Acknowledgments

Participants
Doug Coatsworth
Nilam Ram

MSFP project staff:
Mary Ann Demi
Jennifer (Ford) Szelewa

Program facilitators
Qualtrics help staff

This project was supported by the PAMT training grant (T32 DA017629) from the National Institute on Drug Abuse.
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Brea Burger

- M.S., MFT (2009)
- Doctoral Candidate in Biobehavioral Health
- Prevention mentor: Patricia Koch, PhD
- Methodology mentor: Rachel Smith, PhD

This project was supported by the PAMT training grant (T32 DA017629) from the National Institute on Drug Abuse.
Research Interests

• Capture the complexities of social network structures as they relate to drinking alcohol and engaging in sexual behaviors among a sample of college students.
  – Social Network Analysis
  – Semantic Network Analysis
  – Latent Class Analysis/Latent Transition Analysis
  – Grounded Theory Analysis
  – Dynamic and Longitudinal Network Models
Current Projects

• Social Transition for U.S. and International Students in College
  – Research aim
    • To examine the impact of emerging freshmen social networks on hooking up, alcohol use, and unwanted sexual experiences
  – Methods
    • U.S. and International students interviewed about their first semester
      – Grounded Theory (Charmez, 2006)
      – Semantic Network Analysis


Smith, R., & Burger, B.D. (2013). Mental representations of international college students’ first year transition in the U.S. In progress
Current Projects

• Recreational Activities of College Students
  – Research Aim
    • To track changes in students’ social networks over the weekend and identify latent class structures that represent the heterogeneity in students’ networks
  – Methods
    • College students surveyed during the weekend about who they are “hanging-out” with and what activities they are engaging in
      » LCA to identify social network latent class structures
      » Social network analysis to examine unique network structures that are associated with risky behavior (e.g. heavy alcohol use, unwanted sex)
      » Dynamic network modeling and Latent Transition Analysis to identify changes in network structures

Future Directions

• Near Future
  – Submit various manuscripts to appropriate journals
  – Dissertation proposal late Spring 2013

• Intermediate Future
  – Dissertation Fall 2013
  – Apply for post-docs and jobs

• Distant Future
  – Professor at a research university and working at the international level
Lauren Connell

• B.S. – Finance, Psychology (2010)
• M.S. – Biobehavioral Health (2012)
• Doctoral Candidate – Biobehavioral Health

• Methodology Mentor & Primary Mentor: John Graham, PhD (Biobehavioral Health)
• Prevention Mentor: Linda Caldwell, PhD (Recreation Park and Tourism Management)

This project was supported by the PAMT training grant (T32 DA017629) from the National Institute on Drug Abuse.
Research Interests

• **Prevention:**
  – Obesity prevention
  – Physical activity promotion for health benefits
  – Physical activity enjoyment, motivation and habits
  – Alternative outcomes of increased physical activity (↓ Drug/Alcohol Use, ↑ Mental health)

• **Methodology:**
  – Structural Equation Modeling
  – Planned Missing Data designs
  – Growth Curve Models
  – Intervention Optimization
Previous Projects

- **Parenting and Self-Regulation Predict BMI Trajectories from age 4-15**
  
  Results:
  
  - Positive parenting is protective against weight gain for children who can/cannot delay gratification.
  - Delay of gratification is protective against weight gain for children who have harsh/neglectful parents.
Current Projects

• *Two Method Measurement (TMM) of Physical Activity in Adolescents*
  – Aim: Obtain accurate estimates of the association between physical activity and a given outcome
  – Preliminary Results: Traditional TMM Design not applicable to the data – attempted a 2-group approach to the model with success
Future Directions

• Graduate School:
  – Develop a mini optimized intervention aimed at promoting physical activity in college students
  – NRSA/Other grant mechanism to fund dissertation years and research

• Career:
  – Further prevention and methodology skills in a post-doctoral position
  – Professor at a research university in a health-oriented department

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Jason Scott

- Doctoral Candidate in Recreation, Parks and Tourism Management
  - MS-Recreation and Leisure Studies
  - BS-Exercise Science

- Prevention Mentor: Linda Caldwell
- Methodology Mentor: John Graham
Research Interests

• Using recreation and leisure as a context for prevention of risky and unhealthy behaviors among adolescents

• Using recreation and leisure as a context for self expression and identity formation in promoting positive youth development
  – Promoting physical activity among urban minority youth
  – Promoting positive time use of youth
Need for Prevention

- $2.7 Trillion spent on Healthcare in 2011
  - 75% of Healthcare costs goes to treating chronic diseases that are largely PREVENTABLE
  - By 2020, one-fifth of Healthcare costs will be to treat consequences of obesity if obesity trends continue

- Youth Risk Behavior Surveillance System
  - Behaviors that contribute to unintentional injuries and violence
  - Sexual behaviors that contribute to unintended pregnancy and sexually transmitted diseases, including HIV infection
  - Alcohol and other drug use
  - Tobacco use
  - Unhealthy dietary behaviors
  - Inadequate physical activity
Dissertation

• Promoting PA among African American and Latino youth
  – Health disparities
  – Lack of PA compared to other groups
    • Lowest among AA and Latino girls

• Harrisburg, PA
  – Exploring parental and motivational factors of adolescent physical activity in urbanized areas
  – Over 500 youth
General Model

Parental Support → Physical Activity Participation
Mediation Model

- Parental Support
- Motivation
- Physical Activity Participation
Future Directions

- Dissertation Proposal - May
- Dissertation Defense - Dec./Early Spring

Division of Nutrition, Physical Activity, and Obesity

- **Our vision** – a world where regular physical activity, good nutrition, and healthy weight are part of everyone's life.
- **Our mission** — to lead strategic public health efforts to prevent and control obesity, chronic disease, and other health conditions through regular physical activity and good nutrition.
Elizabeth H. Weybright

• Doctoral Candidate in Recreation, Park and Tourism Management

• Prevention Mentor: Linda Caldwell
• Methodology Mentor: Nilam Ram

This project was supported by the PAMT training grant (T32 DA017629) from the National Institute on Drug Abuse.
Research Interests

Leisure Experience  <->  Adolescent Risk Behavior

Time
Association between Healthy Leisure and Substance Use
Association between Healthy Leisure and Substance Use
Influence of Healthy Leisure on Substance Use
Influence of Healthy Leisure on Substance Use

- Late Escalators
- Middle Escalators
- Consistent Experimenters
- Early Escalators
- Experimental Escalators

Substance Use

- Beg - Grade 8 - End
- Beg - Grade 9 - End
- Beg - Grade 10 - End
- Beg - Grade 11 - End

- 9%
- 29%
- 30%
- 24%
- 8%
Future Directions

• Research
  – High state & trait leisure boredom
  – Cross lagged models
  – Bereaved adolescents risk level & role of leisure

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