

2024 NSCA NATIONAL CONFERENCE RESEARCH ABSTRACT SUBMISSION & PRESENTATION GUIDELINES

Updated September 21, 2023

THE NATIONAL STRENGTH AND CONDITIONING ASSOCIATION® (NSCA®)

The National Strength and Conditioning Association (NSCA) is a nonprofit professional organization dedicated to advancing the strength and conditioning profession around the world.

Mission statement: As the worldwide authority on strength and conditioning, we support and disseminate research based knowledge and its practical application, to improve athletic performance and fitness

The NSCA advances the profession by supporting strength and conditioning professionals devoted to helping others discover and maximize their strengths. We disseminate research-based knowledge and its practical application by offering industry-leading certifications, research journals, career development services, and continuing education opportunities. The NSCA community is composed of more than 45,000 members and certified professionals who further industry standards as researchers, educators, strength coaches, personal trainers, and other roles in related fields.

GENERAL INFORMATION

The National Strength and Conditioning Association (NSCA) is pleased to make a call for research abstract submissions for presentation at the 2023 National Conference. Research abstract presentations are an opportunity to present current research findings to researchers and strength and conditioning professionals at the NSCA National Conference. The research abstracts are the largest portion of the scientific programs presented every year at the National Conference. The NSCA encourages all researchers and students to submit their abstracts for consideration to the 2023 National Conference.

SUBMISSION DEADLINE

The abstract submission deadline is March 1, 2024 (11:59 PM Eastern Time). Late submissions will not be accepted.

NOTIFICATION

Lead authors will receive notification of acceptance or rejection of their research abstract by May 1, 2023. If you do not receive notification by May 1, please contact abstracts@nsca.com.

LANGUAGE

All abstracts must be written in English.

COST

There is no cost to submit an abstract, but due to costs incurred by the NSCA, all accepted abstracts are expected to be presented.

FAILURE TO PRESENT

Failure to present an accepted abstract may result in disqualification from presentations at future NSCA conferences. Poster presenters are expected to stand next to their poster for the duration of their session.

PRESENTATION FORMAT

Research abstracts can be presented in either a podium or poster. Due to a limited number of available podium presentations, all requests for podium presentations cannot be accommodated. If an abstracted submitted for a podium presentation is not accepted for that format, it will automatically be assigned to a poster presentation.

PRESENTATION DATES

Podium and poster presentations occur on all three days of the conference. Thursday and Friday podium presentations are exclusively for students. Podium presentations typically occur in the morning with poster presentations occurring in two blocks each day (except Saturday where only one poster session occurs).

PUBLICATION OF ABSTRACTS

Accepted abstracts, that are presented, will be published in an electronic supplement to the *Journal of Strength and Conditioning Research* (date to be determined). The NSCA encourages all research abstract presenters to submit the completed manuscript of their presented research for consideration in the *Journal of Strength and Conditioning Research*.

RESEARCH ABSTRACT SUBMISSION GUIDELINES

- Abstracts must be original research studies and include only original data that are unpublished. Narrative reviews, systematic reviews, and meta-analyses will not be accepted.
- Abstracts may not have been previously presented (except at an NSCA regional or state conference).
- All data collection must be completed at the time of submission. Incomplete data collection will not be accepted.
- Do not submit abstracts containing data currently in press. In the event that data contained in an accepted abstract is published (paper, electronic, or other format) prior to the abstract's submission to the National Conference, the abstract will be withdrawn.
- Case studies (involving clinical cases, rare circumstances, adverse events, etc.) will only be considered on an individual basis.
- Sample size should be sufficient to draw meaningful conclusions based on primary statistical analyses used.
- The first author of the research abstract is considered the *primary author* and must present the abstract. However, all authors must approve the abstract prior to submission.
- One person may be the primary author on a maximum of two abstracts (only one may be submitted as a podium presentation).
- The number of authors for each abstract is limited to ten (10). An author is defined as an individual identified by the research group to have made substantial contributions to the reported work and agrees to be accountable for these contributions.
- All abstract presenters must pay for their conference registration and all other fees associated with travel.
- Abstracts may only be submitted online.
- For questions, please email the NSCA at abstracts@nsca.com.

SUBJECT CATEGORIES

There are twelve (12) available categories for research abstracts:

- | | |
|---|---|
| 1. Biochemistry / Endocrinology | 7. Nutrition / Ergogenic Aids |
| 2. Biomechanics / Neuromuscular | 8. Resistance Training / Periodization |
| 3. Body Composition | 9. Social and Behavioral Science |
| 4. Endurance Training / Cardiorespiratory | 10. Special Populations (health conditions) |
| 5. Fitness / Health | 11. Speed / Power Development |
| 6. Flexibility / Stretching | 12. Tactical Strength and Conditioning |

USE OF HUMAN AND ANIMAL SUBJECTS

All research studies that include data recorded from human participants must comply with the Declaration of Helsinki and the US Department of Health and Human Services Policy for the Protection of Human Research Subjects (US Code, Title 45, Part 46 Protection of Human Subjects). All animal studies must comply with the Public Health Service Policy on Humane Care and Use of Laboratory Animals.

ABSTRACT FORMATTING SPECIFICATIONS

- All abstract submissions must be formatted correctly (see examples below) and include original research-based data to allow for a thorough review. Abstracts that do not meet these criteria will not be accepted.
- The body of the abstract cannot exceed 3,500 characters (including spaces) when there is no figure or table included. When there is a figure or table associated with the abstract, the text cannot exceed 3,000 characters (including spaces).

FIGURES AND TABLES

- Abstracts may contain either one figure or one table, but not both. Abstracts submitted with more than one figure or table will have both images removed.
- Any figure or table must pertain to the abstract for the purpose of visualizing data and must be referred to in the text of the abstract. Figures or tables that do not pertain to the abstract will be removed.
- Figures or tables must be concise. It is at the discretion of the NSCA if a figure or table is too big, and if so, it will be removed. Additional text that should be in the abstract may not be substituted in the figure or table.
- The resolution of the figure or table must be adequate for reprinting (i.e., = 150 dpi).
- Including a figure or table does not replace any of the required sections (i.e., purpose, methods, results, etc.).
- No photos or pictures are allowed – only a figure or a table.
- The figure or table must be an image file (.jpg, .gif, and .png are accepted). PDF and PowerPoint are not acceptable.

REQUIRED INFORMATION

- Abstracts/submissions must contain the following:
 - Long title cannot exceed 150 characters (including spaces).
 - Short title cannot exceed 10 words.
 - Language: English.
 - Abstracts must contain the following labeled sections: PURPOSE, METHODS, RESULTS, CONCLUSIONS, and PRACTICAL APPLICATIONS. These section labels must appear in all capital letters on the abstract.
 - Acknowledgements should be included to denote funding sources and/or conflicts of interest when applicable.
- Abstracts/submissions cannot contain the following:
 - Advertising. Research abstracts should be non-biased, free from solicitations, and should not contain demonstrations of products for the purpose of sales.
 - Author(s) degrees (MS, PhD, etc.) or credentials (CSCS, FNSCA, etc.).
- The following information will be asked during the submission process:
 - All authors' names.
 - If the primary/presenting author is submitting for award consideration, they must be an NSCA Member (professional or student).

- If an author is NSCA certified, their NSCA ID Number must be entered to automatically record NSCA CEUs. If the authors NSCA ID Number is not entered, the author must self-report the CEUs.
- All authors' primary institutions/laboratories (institution/laboratory name, city, state).
- All authors' professional mailing address, email address, and phone number.
- Desired presentation format (i.e., podium or poster).
 - Due to limited availability, not all podium requests can be accommodated.
- Abstract subject category.
- If the abstract is being considered for a Student Research Award (see below).

BRAND NAMES

- Brand names may only be used in the METHODS section to describe testing procedures when necessary and/or in the ACKNOWLEDGEMENTS section to describe funding or disclose any financial relationships.
- Brand names cannot appear in the title (short or long).
- Brand names may not be used for promotional purposes. It is at the discretion of the NSCA to determine if the use of the brand name is for descriptive or promotional purposes.
- The NSCA reserves the right to replace any brand name with a generic name without notice.

EXAMPLE ABSTRACT WITH FIGURE OR TABLE

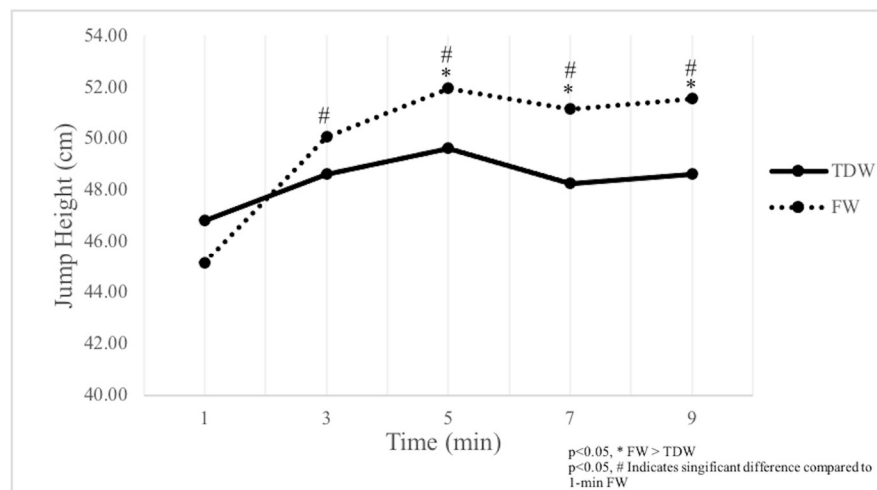
EFFECT OF AN ISOINERTIAL POST-ACTIVATION POTENTIATION PROTOCOL ON COUNTERMOVEMENT JUMP KINETICS

A. Burke, T. Lu, M. Magee, M. Jones

¹George Mason University

Background: Acute bouts of isoinertial training can enhance muscle force production during subsequent plyometric exercise. Evidence supports flywheel isoinertial half squats as an effective lower-body preload activity. However, further research is necessary to determine the degree to which such post-activation potentiation (PAP) conditioning activities influence jump kinetics. **PURPOSE:** To compare countermovement jump (CMJ) performances following a traditional dynamic warmup (TDW) and flywheel (FW) warmup. **METHODS:** College-aged students (9 men; 4 women), with ≥ 2 years of resistance training experience, and the ability to complete a 1.25x body weight back-squat participated. The crossover design consisted of 3 sessions. Session 1 included anthropometric measurements, strength assessment, and familiarization with the FW half-squat. Sessions 2 and 3 consisted of the randomized testing condition (FW or TDW). Prior to FW and TDW conditions, participants completed 5 minutes (min) of treadmill walking (3.5 mph, 1.5% grade). In the TDW condition, participants completed 20 seconds of skipping, 20 bodyweight lunges, and 20 bodyweight squats, interspersed by 1 min of passive recovery. In the FW condition, participants completed 3 sets of 10 repetitions of bilateral half squats, interspersed by 2 min of passive recovery. Load used for the FW protocol was 1 large disk (mass = 4 kg; inertia = 0.050 kg·m²) and 1 medium disk (mass = 2.8 kg; inertia = 0.025 kg·m²). Upon completion of FW or TDW, participants completed a maximal CMJ at 1 min, 3 min, 5 min, 7 min, and 9 min post-intervention. Analyzed variables included CMJ height (cm), reactive strength index modified (m/s), braking force (N), and power relative to body mass (W/kg). Statistical analyses included 2 (condition; TDW or FW) x 5 (CMJ time point) repeated measures analysis of variance (RMANOVA). Significance was set a priori to $p < 0.05$. Bonferroni post hoc analysis was used to identify differences between conditions. **RESULTS:** Figure 1 includes performance outcomes for CMJ height. RSImod, braking force, and power relative to body mass did not differ between conditions. CMJ height had a significant condition x time interaction effect ($p = 0.039$). Post-hoc analyses indicated that CMJ height was greater following the FW warm-up at 5 min ($p = 0.02$), 7 min ($p = 0.04$), and 9 min ($p = 0.03$). There were significant time-effect differences in CMJ height across trials for the FW condition, but not for the TDW condition. Post-hoc analyses indicated that CMJ height at 3 min ($p = 0.02$), 5 min ($p = 0.01$), 7 min ($p = 0.02$), and 9 min ($p = 0.01$) were greater than at 1 min. Figure 1 includes performance outcomes for CMJ height. **CONCLUSIONS:** The utilization of a FW half squat protocol may enhance CMJ height. **PRACTICAL APPLICATION:** FW half squats can be used to improve lower-body explosiveness during the CMJ; therefore, it is recommended to incorporate them as a PAP preload activity, prior to performing lower-body plyometric exercise.

Countermovement Jump Height Performance Outcomes



PODIUM ABSTRACT PRESENTATION GUIDELINES

- All podium abstract presentations must be prepared in Microsoft PowerPoint.
- All presenters are required to upload their presentation to an NSCA Dropbox account prior to the conference. Dropbox account URL to be provided.
- Presenters should bring a back-up copy of their presentation on a USB drive.
- All presenters should check in with their session's moderator prior to presenting.
 - Moderators are assigned in 1-hour blocks (9:00 – 10:00 AM, 10:00 – 11:00 AM, etc.). Podium presenters should check-in with their moderator before the hour block of their presentation.
- Podium abstract presentations must be consistent with the contents of the accepted abstract, and include the following sections: purpose, methods, results, conclusions, and practical applications.
- Podium presentations are 10 – 12 minutes in duration with 3 – 5 minutes of questions from the audience and responses from the presenter.

EXAMPLE PODIUM PRESENTATION

2023 Doctoral Student Outstanding Podium Presentation
Kealey Wohlgenuth – Texas Tech University

CHARACTERISTICS OF PERFORMANCE ON AN AIR CONSUMPTION TEST

Background information on the fire-scene and physical abilities testing

What makes a slow and fast performer?

Candidate Physical Abilities Test

- Must complete all 10 tasks for 1.5 hours of the test
- 8 minutes or less shows the firefighter has the capacity for the job (Parnianpour et al., 2008)
- No longer than 20 minutes
- Goal is to consume as little air as possible using as little air as possible
- "Fireground pace"

Air Consumption Test

- Must complete all 10 tasks for 1.5 hours of the test
- 8 minutes or less shows the firefighter has the capacity for the job (Parnianpour et al., 2008)
- No longer than 20 minutes
- Goal is to consume as little air as possible using as little air as possible
- "Fireground pace"

Research Question and Purpose

What are the demographics and physiological determinants of slow versus fast performers on the air consumption test?

Methods: Design and Participants

- 100 active firefighters (12 females)
- Healthy
- All from a single fire department in Texas
- Completed ACT for yearly assessment
- Two independent testing sites
- Demographics and physiological data
- ACT
- 2 trials test
- Cardiorespiratory
- No caffeine

Methods: Variables of Interest

- Demographic and physiological data
- Age
- Body mass index (BMI)
- Body fat percentage (BF%)
- VO2max (L/min)
- Relative VO2max
- Graded cycle-based test
- End-tidal partial pressure (ETP)
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Statistical Analyses

- Kruskal-Wallis test used to determine between slow and fast performance groups (Parnianpour et al., 2007)
- Dependent upon time to task completion

Statistical Analyses

- Independent samples T-tests and one-way ANOVA used to determine between slow and fast performance groups (Parnianpour et al., 2007)
- Significance level was set at 0.05

Results

- The results show that firefighters who were fast and slow performers were significantly different
- No significant differences between slow and fast
- Age ($p < 0.01$, $r = -0.38$, $p < 0.01$)
- Body mass index ($p < 0.01$, $r = -0.38$, $p < 0.01$)
- VO2max ($p < 0.01$, $r = -0.38$, $p < 0.01$)
- VO2max ($p < 0.01$, $r = -0.38$, $p < 0.01$)

Results

	Fast (n=11)	Slow (n=11)
Age (years)	27.8 ± 8.0	28.4 ± 8.0
Body mass index (kg/m²)	27.87 ± 6.80	28.48 ± 6.80
Body fat percentage (%)	22.2 ± 6.80	22.4 ± 6.80
VO2max (L/min)	37.2 ± 8.71	37.0 ± 8.71
VO2max (ml/kg/min)	2332.00 ± 327.71	2332.00 ± 327.71
End-tidal partial pressure (ETP)	477.75 ± 10.08	478.00 ± 10.08
End-tidal partial pressure (ETP)	2.88 ± 0.21	2.88 ± 0.21

Conclusions

BF%, air consumption, VO2max, and total task time were significantly better in fast firefighters

Age, maximal heart rate, and BMI may not have a meaningful impact on ACT performance

Summary

Air consumption test is a physical capability assessment often used to assess fitness progress, with no known data

There are slow and fast performers on the test, but why?

BF%, air consumption, VO2max, and total task time were better in the fast group. Age, BMI, and maximal heart rate may not have a meaningful impact on ACT performance

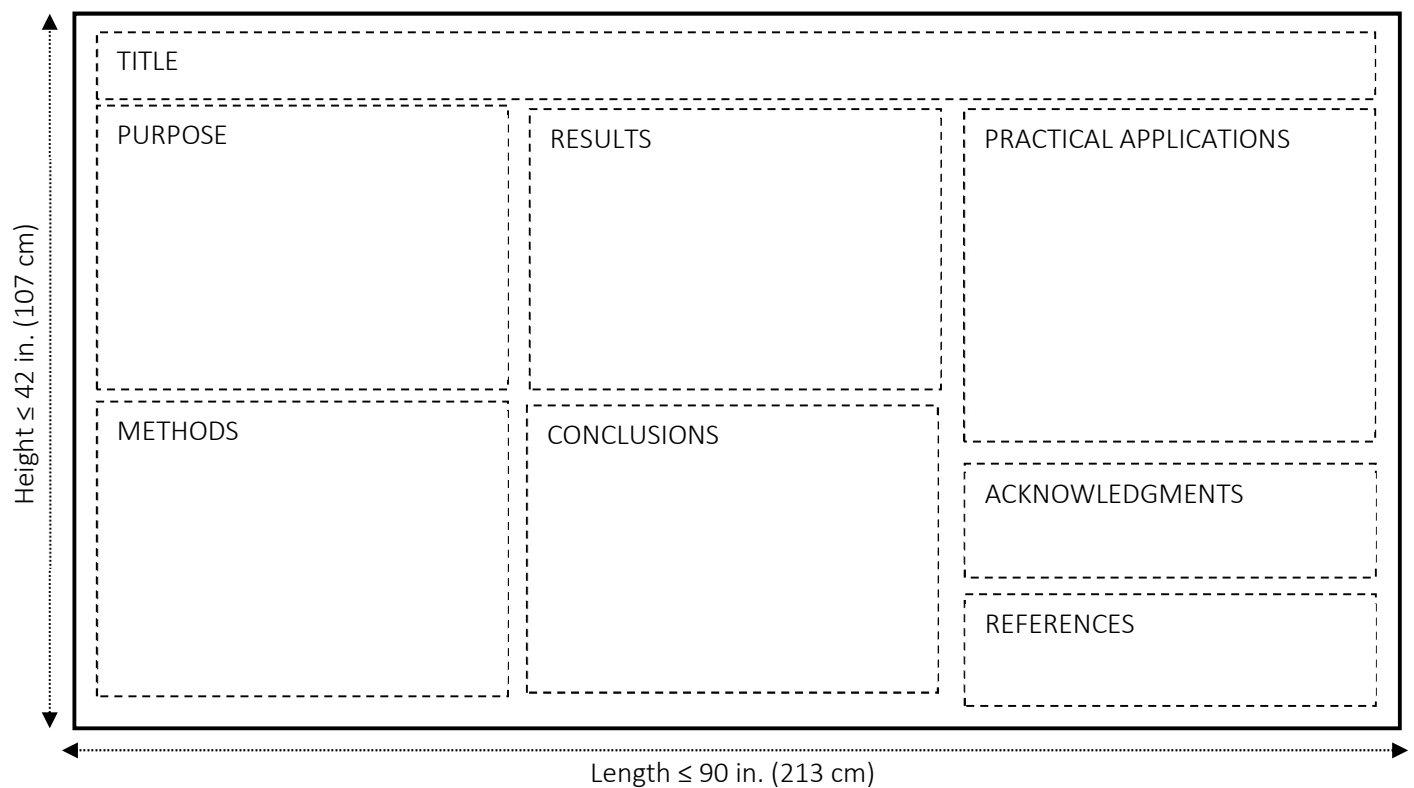
Questions?

Kealey Wohlgenuth, M.S., C.S.P., C.S.P.D.
Graduate Student, Texas Tech University
Department of Health, Behavior, and Society
Email: kealey.wohlgenuth@ttu.edu

POSTER ABSTRACT PRESENTATION GUIDELINES

- All poster presentations should be printed on one uniform poster sheet with dimensions not exceeding 42 × 90 inches (107 × 229 centimeters) (height × width). Unless otherwise noted, the poster boards on which the posters are hung should be 48 × 96 in. (122 × 244 cm).
- Poster abstract presentations must be consistent with the contents of the accepted abstract, and include the following sections: purpose, methods, results, conclusions, and practical applications.
- Poster presenters are expected to stand next to their poster for the duration of the presentation time.
- The Research Committee recommends one of the two following layouts (Traditional Poster or #betterposter) as a general guideline for all poster presentations:

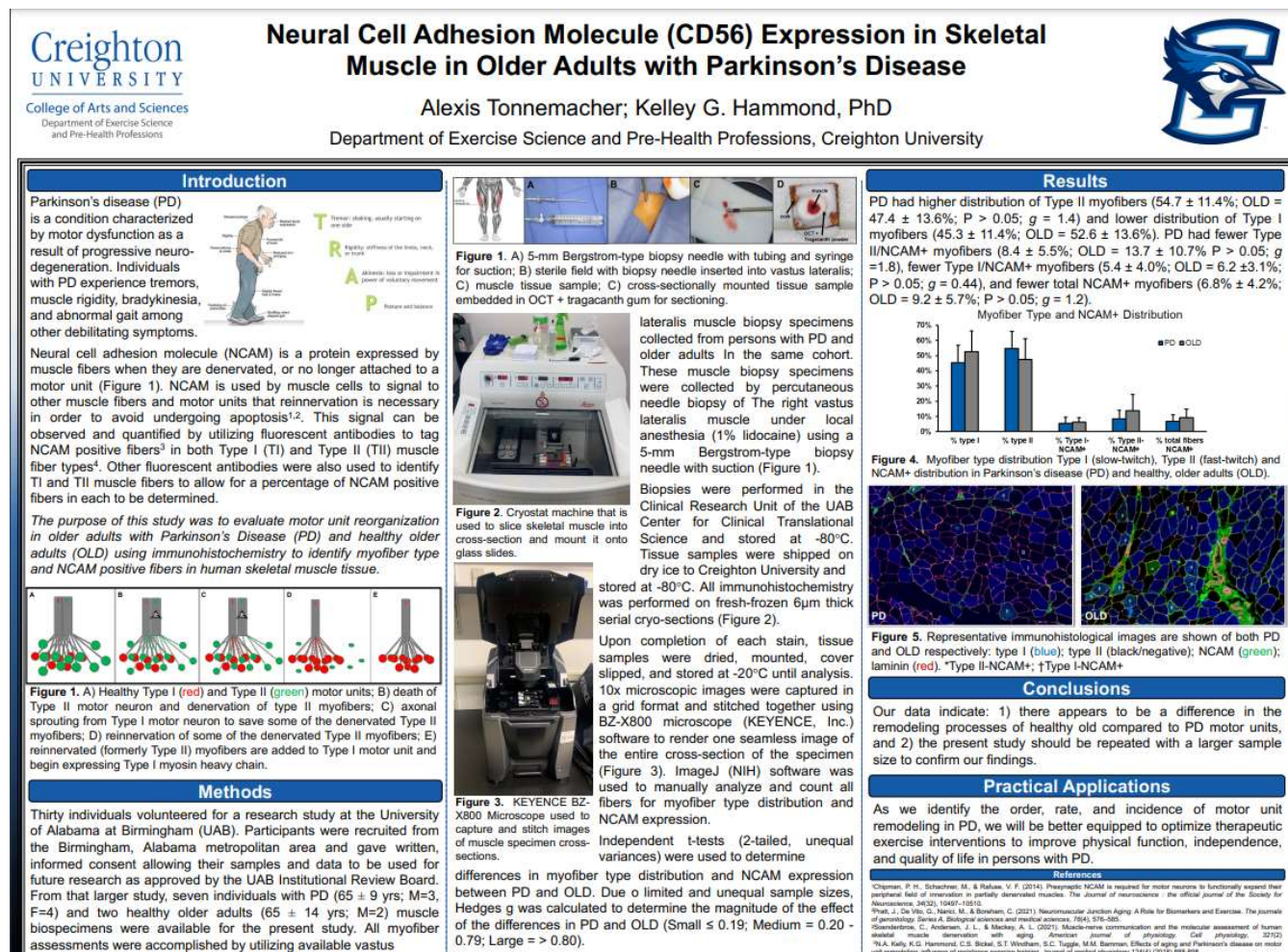
I. TRADITIONAL POSTER DESIGN



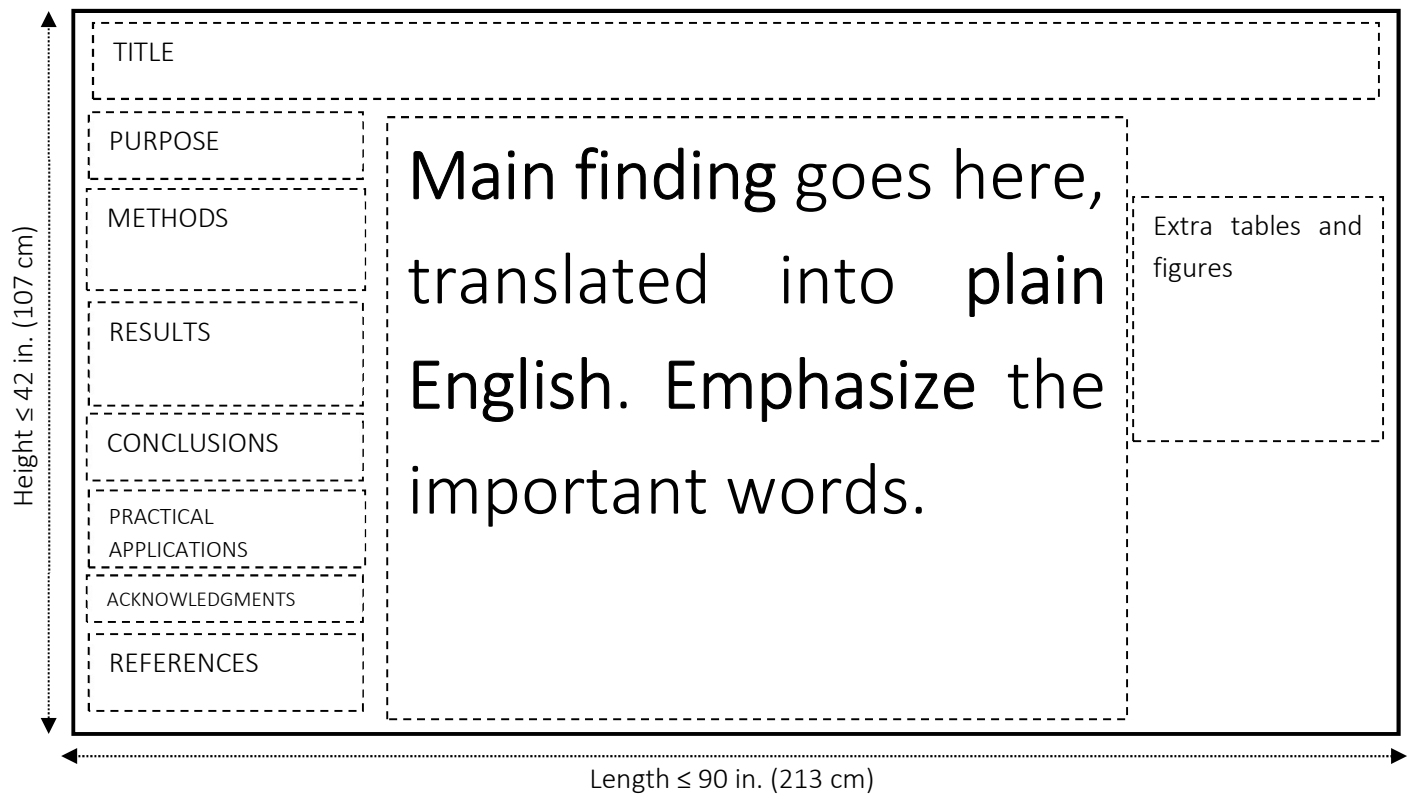
EXAMPLE OF TRADITIONAL POSTER PRESENTATION

2023 Undergraduate Student Outstanding Poster Presentation Winner

Alexis Tonnemacher – Creighton University



II. #BETTERPOSTER DESIGN

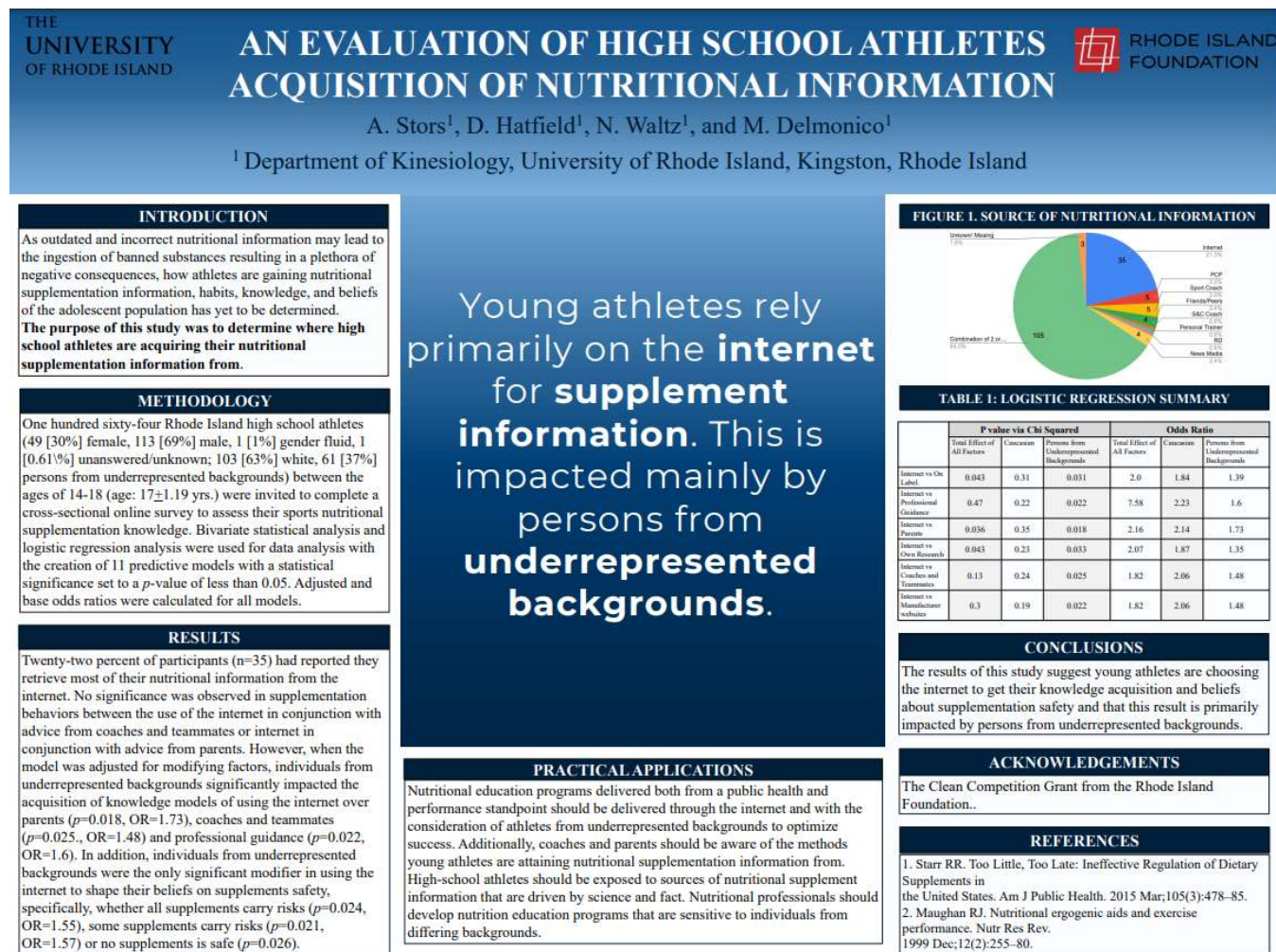


More information on #betterposter design can be found at <https://www.youtube.com/watch?v=1RwJbhkCA58>

EXAMPLE OF #BETTERPOSTER DESIGN

2023 Master's Student Outstanding Poster Presentation Winner

Amanda Stors – University of Rhode Island



POSTER PRINTING & SHIPPING OPTION

The NSCA has partnered with posterpresentation.com to offer discounted poster printing with shipping directly to the National Conference (or another location). This is a paid service and completely optional. For more information or to order visit: <https://www.posterpresentations.com/groups/NSCA/nsca-research-poster-printing.html>

ABSTRACT REVIEW PROCESS

The Scientific Programs Subcommittee is responsible for reviewing the NSCA Research Abstracts to assure that the correct formatting has been applied and to solicit blinded external review(s) for scientific content. Abstracts that do not meet the previously stated formatting criteria will be rejected. The Scientific Programs Subcommittee may solicit a blinded external review. The abstract may be externally reviewed for scientific content, appropriate methodology, correct statistical analysis, proper interpretation of results, and contribution to the field of strength and conditioning. If a reviewer suggests that an abstract be rejected, the Scientific Programs Subcommittee will independently re-review the abstract in question. In this case, the Scientific Program Subcommittee will have final authority to accept or reject the abstract.

STUDENT AWARD CONSIDERATION

Any student author who wishes to submit a research abstract for award consideration must be must be the primary author on the abstract and a Student or Professional Member of the NSCA. Each student can only have one (1) abstract (podium or poster) submitted for award consideration.

STUDENT RESEARCH AWARD DESCRIPTION

The NSCA awards outstanding research efforts by students through the NSCA Student Research Awards. Five awards are given each year:

- 1.** Doctoral Student Research Award for Outstanding Podium Abstract Presentation
- 2.** Doctoral Student Research Award for Outstanding Poster Abstract Presentation
- 3.** Master's Student Research Award for Outstanding Podium Abstract Presentation
- 4.** Master's Student Research Award for Outstanding Poster Abstract Presentation
- 5.** Undergraduate Student Research Award for Outstanding Poster Abstract Presentation

PRELIMINARY JUDGING FOR STUDENT AWARDS

The top ten (10) master's podium and top ten (10) doctoral podium submissions after the initial review period will be selected to be judged at the National Conference. The top ten (10) doctoral posters, top ten (10) master's posters, and top five (5) undergraduate posters after the initial review period will be selected to be judged at the National Conference. Students selected to be judged at the National Conference will be notified of their selection.

STUDENT RESEARCH AWARD CRITERIA

- Each student award applicant must be a current Student or Professional NSCA Member at the time the abstract is submitted.
- A student can be the primary author on a maximum of 2 abstracts; however, only 1 abstract can be eligible for the student award.
- The candidate must be enrolled as a full-time student at the time of abstract submission *or* have completed his/her degree no more than 1-year prior to the NSCA National Conference.
- The abstract must be submitted according to the required specifications (*see above*) and the “Student Award” option must be selected.
- The presentation guidelines (either podium or poster) must be met as stated in this document.
- Student award candidates must attend the NSCA National Conference to present their research.
- Winners will be announced at the NSCA Awards Banquet on the Friday evening of the conference, as well as through NSCA’s social media channels.
- Case studies are not eligible for award consideration.

STUDENT AWARD JUDGING CRITERIA

Below are five (5) basic questions and additional sub-questions that are used by the judges to evaluate the student award candidates. Each question is answered with a Likert scale response on evaluation sheets, with spaces for judges’ comments. The points are tallied and the comments are considered, narrowing the candidates for consideration. In the event of a tie, an overall subjective score provided by the judges from 1 – 100 will be considered.

1. Was the presentation knowledgeable and professional?
 - a. For podium presentations – were the slides readable?
 - b. For poster presentations – was the poster readable?
 - c. How involved was the student with this project?
 - i. Did the student provide well-informed responses to the questions?
 - ii. How knowledgeable was the student about this project?
 - d. How well did the authors follow the guidelines for abstract presentations (component parts)?
2. Was the introduction/literature review sufficient and relevant?
3. Was the study well designed?
 - a. Was the purpose clearly stated?
 - b. Did the methodology address the research question?
 - c. Were the statistical procedures appropriate?
 - d. Were the conclusions valid based on the results of the study?
4. What was the scientific impact of the research?
5. How well did the student *bridge the gap* with the practical application section?

SUBMISSION CHECKLIST

- ✓ Abstract is written in English.
- ✓ Research study is original and has not been previously published or presented.
- ✓ All required sections are provided and labeled.
- ✓ PURPOSE, METHODS, RESULTS, CONCLUSIONS, and PRACTICAL APPLICATIONS.
- ✓ All data are completed and present at the time of submission.
- ✓ No brand names are included (only permitted in METHODS and/or ACKNOWLEDGEMENTS sections to describe procedures).
- ✓ No brand names appear in the long or short title.
- ✓ Any funding is described in the acknowledgements section.
- ✓ Any potential conflicts of interest are described in the acknowledgements section.