

PUSHING FOR A CHANGE IN WOMEN'S SOCCER

FROM THE UNITED STATES SOCCER

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BACKGROUND

The United States Soccer Federation is the National Governing Body of soccer (NGB) in all its forms in the United States of America¹⁰. In the United States, soccer is experiencing an inspiring long-term participation growth in the game. The mission of the federation is to make soccer, in all its forms, the preeminent sport in the country, and to continue the development of soccer at all recreational and competitive levels⁹. The U.S. Women's National Team (USWNT) is the most successful international women's soccer team after winning four (4) World Cup titles, four (4) Olympic Gold medals, and nine (9) CONCACAF Gold Cups. Multiple factors have facilitated growth in the women's game, including the professionalism of the sport and the evolution of female leagues. For example, the National Women's Soccer League (NWSL) is committed to developing a Division-I women's professional soccer league comprised of twelve (12) teams, with more joining the league each year. In addition, Kansas City Current will be the first team in the NWSL to build a venue specific for professional women's soccer. Also, the USL W League, the Division-II professional soccer league, was recently created, developing the next generation

of women's talent in a different pathway, illustrating how leagues and certain clubs invest in women's soccer, accelerating the growth of the game.

Overall, women's soccer is experiencing an exciting time given the rise in global popularity⁶. Continuous record crowds may be seen in games (e.g., Women's 2022 UEFA Euro final with 87,192 fans; FC Barcelona's all-time high attendance of 91,648 fans in Camp Nou; Morocco vs Nigeria in 2022 Women's African Cup of Nations with 45,562 spectators)⁶. This trend is set to continue globally and will be amplified by the 2023 FIFA Women's World Cup, which will be hosted in Australia and New Zealand⁶. A total of 32 teams (up from 24 teams in 2019) will participate in this World Cup, which is expected to deliver more record-breaking crowds⁶.

NEW COLLECTIVE BARGAINING AGREEMENTS THROUGH 2028

In 2022, the United States National Soccer Team Players Association (USNSTPA, which is the labor organization for the current members of the USMNT, and a membership organization for alumni members of the USMNT), and the United States Women's National Team Players

Association (USWNTPA, which serves as a labor organization for the current members of the USWNT) agreed to unprecedented new collective bargaining agreements (CBAs)⁸. The two separate CBAs were aligned in agreeing to and providing equal pay (including FIFA World Cup prize money), which is a global first and perhaps a global standard moving forward in international soccer. U.S. Soccer is the first federation to achieve this goal, and it was meaningful to sign this groundbreaking document several months after the 50th anniversary of the revolutionary Title IX law — arguably one of the most instrumental and revolutionary forces in advancing women's².

Under these agreements, the federation equalized FIFA World Cup prize money awarded to the U.S. Women's and Men's National Teams (USWNT and USMNT) for participating in their respective World Cups. The rostered players in the 2022 Men's and the players who will be rostered on the 2023 Women's World Cup will be paid an equal percentage of the collective prize money paid by FIFA for the teams' performance and participation in their respective World Cups. This will be the same for the 2026 Men's World Cup and 2027 Women's World Cup. Regarding non-World



Image: USA fans celebrate. Women's World Cup 1999 Finals. USA wins 5-4 on penalty kicks. © ISI Photos (isiphotos.com)

Cup tournaments, the CBAs guarantee that male and female players will earn an equal amount of the total prize paid when both teams participate in the same competition. These are historic CBAs that will cover the two World Cup and Olympic cycles and keep both USWNT and USMNT players among the highest paid national team players in the world. Other key aspects of the agreement include identical appearance fees and game bonuses, commercial revenue sharing, etc., through 2028.

The new agreements also improve non-economic terms, including player safety and health, data privacy, and the need to balance responsibilities to both country and club. The federation is committed to fostering the best playing and training environments ensuring both senior national teams receive equal working conditions (e.g., venues and field surfaces, national team staffing, accommodations, use of charter flights for team travel, or safe work environment). Additional benefits include the 401(k) plan for retirement and child-care during senior national team training camps and matches. The USWNT have additional benefits, which include health insurance, dental insurance, vision insurance, parental leave, and short-term disability benefits.

CURRENT CHALLENGES OF WOMEN'S SOCCER FROM A SCIENTIFIC PERSPECTIVE

From a scientific perspective, there are a few challenges with regards to women's soccer⁷:

1. Having a better understanding of the needs of players and coaches⁷. This implies that we need to analyze
 - a. if the way the female game stresses the metabolic systems is similar or different in comparison with male players;
 - b. the priorities for training and testing female players;
 - c. the recovery process after training and matches of female players compared to males;
 - d. injury epidemiology of women's soccer;
 - e. the role of the hormonal milieu on injury risk and performance;
 - f. effective injury prevention and rehabilitation programs for female players;
 - g. response to psychological pressure before matches according to the competitive level (e.g., domestic or international competitions, and friendly or official matches).
2. Research in women's soccer should be intensified⁷. Stakeholders need to develop a collaborative environment (e.g., between federations, universities, clubs, coaches, and players) and more funding should be allocated for this aim.
3. Knowledge must be disseminated in an effective way⁷. Research questions should be designed according to stakeholders' needs and this is why involving clubs, coaches, and players

makes the transference of knowledge to the field easier. In this regard, federations may play a key role in this process.

4. Change the practice for the benefit of coaches and players⁷. It is necessary to adopt a women's soccer-specific approach from a coaching education perspective and an evidence-based practice that enhance the quality and knowledge of coaches and develop the game.

THE U.S. SOCCER FEDERATION AND THE HIGH PERFORMANCE DEPARTMENT'S INITIATIVES

Unique to a growing global sport with limited employment options is finding qualified and diverse personnel interested in working in the Women's game. Due to the global competitiveness for quality soccer-specific high performance staff and the nascent employment offerings (e.g., sports scientists) in the United States, the federation is developing curriculums for domestic positions like the sports scientist versus established curriculums overseas (especially in Europe and Australia). For instance, European and Australian countries have had the advantage of recruiting already educated soccer-specific scientists at the elite level and have been supporting their National Teams from a much larger and more experienced talent pool. To address this challenge, U.S. Soccer Federation has created an initiative to

target non-traditional avenues to hire a more diverse group of high-performance practitioners. An example of our approach is leveraging women-focused organizations like the Women in Sports Leadership Program and the Women in Science USA job board to attract applicants in their network. Our goal is twofold - reach more women scientists and support them in applying for positions in sports. Also, we have revised the application wording, highlighting the transferable skills needed to be successful in our sport and making our employment offerings more attractive to a more diverse population than before.

The federation has also created a research and innovation position, which works in multiple disciplines and seeks answers to multiple research questions related to women's soccer. The research and innovation position is also developing a collaborative environment between critical stakeholders to generate women's soccer-specific knowledge about high performance topics and ensure the effective transfer of that knowledge. For example, this position will work on facilitating a better understanding of the women's game by analyzing the patterns of high-intensity and sprinting actions or the contribution of soccer-specific movements to the overall metabolic load and fatigue pattern as suggested by previous research⁷. Furthermore, the department is interested in knowing more about female players' peak competitive age because our current national team player pool is one of the oldest in the world. For instance, all forwards except for one in the 2021 Olympic campaign were over 30 years of age. A previous study on the 2012 Olympic Games found that female teams that were not qualified for the quarterfinals were younger (~22.1 years old) compared to those that got better classifications in the championship (>26 years old)¹. However, another study with male professional soccer players concluded that they peak around their mid-20s (specifically, between 25 and 27 years old, depending on playing position)⁴. As one can see, the lack of consensus demands further investigation.

A recently published study explored gender differences in professional European soccer through machine learning interpretability and match actions data⁵. The soccer industry relies heavily on data models, which historically have been designed to be non-gender specific. Thus, the



Image: United States goal during the SheBelieves Cup game between Canada and USWNT. © ISI Photos (isiphotos.com)

Sporting Analytics Department analyzed the differences between the women's and the men's games to apply gender-specific data for effective, impactful decision-making. Based on this research, we can design new, gender-specific data models (e.g., adjusted expected goals, expected pass completion %, zone 14 value). This research and data modeling is an ongoing, long-term project that needs investment to expand the sample size by leveraging big data sets and highly skilled individuals trained to do the research and data modeling.

Also, collaborations with research centers, universities, and U.S. Soccer members are critical for growing the game and fostering the best playing environments. For instance, the High Performance Department developed "The Soccer Age Plan" in collaboration with one of our partners for building key performance indicators and benchmarks. Physical performance is becoming a game changer, so it is necessary to research reference standards for physical performance test outcomes relevant to female players across various age groups and levels³.

Furthermore, investments in building relationships and providing education are ongoing. For example, the High Performance Department visits to the NWSL

clubs facilitate a better understanding of their needs and allow for a tailored, unique support plan for their staff from a high performance perspective. The federation provided professional development for the teams with workshops on improving players' wellness and performance (e.g., required recovery periods between games or load management). Also, the High Performance staff dedicated to the women's soccer team has visited multiple national universities to educate students who will be the future generation of practitioners in the country.

Additionally, applying for grant aid has been a strategic focus to supplement research projects for women soccer players. For instance, since the Technology & Innovation Fund Program by the United States Olympic and Paralympic Committee (USOPC) supports performance-impacting and sports tech-based projects, a specific project aimed at using a non-invasive monitoring tool to maximize recovery of female players, was recently submitted. This innovative implementation of enhanced recovery strategies is very valuable for USWNT and our women's soccer landscape (e.g., NWSL). A recovery room has also been designed for the upcoming 2023 Women's World Cup. The goal is to provide best

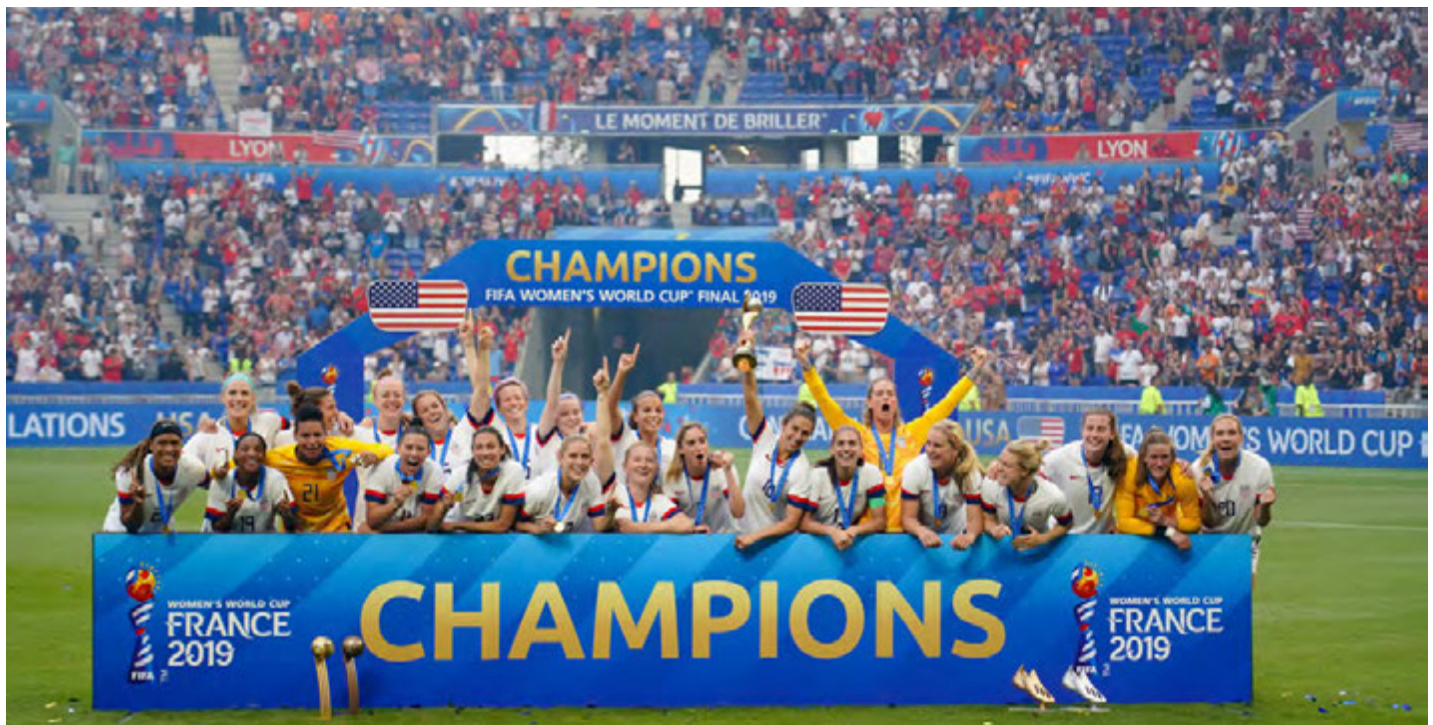


Image: USWNT 2019 FIFA Women's World Cup champions. © ISI Photos (isiphotos.com)

practices and highly innovative recovery support for individual players to maximize physical and mental recovery between games. Providing team recovery in the performance room, active recovery in the training site's outdoor fitness gym, and individualized 'all day' recovery support will be a golden combination. Players need to spend time on their own but also want to have the feeling of working together to win the World Cup. The purpose is that players feel better when leaving the recovery room, so they will receive individual recovery advice via a mobile app every day after the morning screening that will give them direction about what modalities they can use to assist and support their physical, mental, and post-game recovery. There will be three different moods setup: recovery mood, activation mood, rest, and pre-sleep mood. The staff will also collect data about daily wellness, weight, hydration, resting heart rate and heart rate variability, thermography, hip range of motion, and other neuromuscular function-related variables from the hamstring, groin, and jump height testing.

THE U.S. SOCCER FEDERATION AND THE SPORTS MEDICINE DEPARTMENT'S INITIATIVES

Although many of the initiatives of the High Performance Department are supported by

the Sports Medicine Department at U.S. Soccer Federation, this department has several additional initiatives which help the women's game grow and are in line with the CBAs.

For example, the federation approved an initial funding for a single clinician under the Chief Medical Officer to support mental health and performance. This specialist will oversee the USWNT, USMNT, youth national teams and extended national teams environment and implement clinical support through the implementation of leading education, training, tools and awareness of mental health to issues and athletes. In the last 3 years, U.S. Soccer has been intimately engaged with the USOPC and the mental health teams to offer critical services to our athletes. Additionally, in the last year U.S. Soccer has trained over 300 leading coaches on "Mental Health First Aid" to build mental health as a thread of our culture. The aim is to continue and to increase these educational platforms through the new mental health consultant. Lastly, with several of our World Cup qualified teams we have hosted remote and in person mental health discussions and awareness events for our collective teams.

U.S. Soccer is supported by the USOPC in the area of mental health care of players and staff. It is our goal to have the full spectrum of mental health support in-house. This

will allow every coach and player in all US Soccer National Teams environment to have individual support and education. This will also enable us to have a solution for teams to have team sessions and joint sessions (staff and team) for the best possible education and performance mental care leading to better health and performance on and off the field. In addition, the USOPC medical insurance, EAHI, has been immensely impactful for players, allowing them access to top care providers across the country.

Also, this department has an athlete-level analytics section that focuses on the mental and physical health, safety, and well-being of the athletes. The meso-level analysis of the National Team environments and the players' daily environments informs our approach to further optimize training, recovery, and performance. Athlete level analytics tracks - mental and emotional training, athlete training, competition load, and injuries sustained while in a National Team environment or home/club environment.

In addition, since culture is a living/tangible element and it requires constant maintenance, care, and attention, in the leadup to the 2020 Olympic Games we utilized the services of an independent contractor specializing in organizational psychology to enhance the culture of the USWNT and new staff – coaching and

administrative. Although helpful, this wasn't nearly as effective as possible. The organizational psychologist was not able to attend in-person trainings with the players due to Covid-concerns, mitigating his effectiveness with the group.

Considering the above outcome, we have instituted a different approach, mediated by one of our coaches. Our coaches have developed and oversee a process to engage the team in team-generated values that lay the foundation for all our behaviors. Working with a leadership group, consisting of players representing differing ages, experience, and skillsets both on and off the field. Additionally, it allows for a non-competitive vehicle for conversation, deepening the connection between the players and staff, which will be help modulate interactions, identify needs, and initiative-taking engagement to address necessities which will prepare us to successfully cope with the stress inherent to competition.

A key area U.S. Soccer continues to lead regarding health and safety remains in the area of Head Injuries and Concussions. U.S. Soccer led by limiting heading in the youth game in 2015 which is now currently a model for others around the world. In 2023 U.S. Soccer hosted the second Head Injury Summit bringing all of the professional leagues in the United States as well as our international peers to explore the existing science to best assure policies, recognition, assessments and management of Head injuries across all levels of players is done so in a comprehensive and safe manner. This conference on soccer specific Concussion matters is unprecedented and highlights the forward work being tackled by U.S. Soccer in support of the game.

CONCLUSION

Women's soccer is experiencing an exciting time given the rise in global popularity. The U.S. Soccer Federation is pushing for a change in women's soccer and this may be observed by multiple initiatives across the organization. One of the greatest news for women's soccer in the United States is that the federation, the USNSTPA, and the USWNTPA agreed to new collective bargaining agreements (CBAs). Key aspects of this agreement are the equalization of FIFA World Cup prize money, identical appearance fees and game bonuses, and commercial revenue share. Also, these

agreements improve non-economic terms, including player safety and health, data privacy and the need to balance responsibilities to both country and club.

From a scientific perspective, there are a few challenges with regards to women's soccer and the federation has already started a plan of action which will grow the women's soccer game not only in the United States but also internationally.

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