

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

EP FAMILY CORP.,

Petitioner

v.

OFFICE KICK, INC.,

Patent Owner

Case IPR2025-00471
Patent No. 11,849,843

DECLARATION OF MARK BENDEN, PH.D.

Exhibit 2020 EP Family v Office Kick IPR2025-00471
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I, Mark Benden, resident at 5713 Shellbournes Hill, College Station, Texas 77845, hereby declare as follows:

I. INTRODUCTION

I have been retained by Patent Owner to provide my opinions concerning the validity of Claims 1-20 of U.S. Pat. No. 11,849,843 (“the ’843 Patent”). I am being compensated for my time by the hour in preparing this Declaration, but my compensation is not tied to the outcome of this matter. I have no other affiliations with the Patent Owner.

I reserve the right to supplement this Declaration if further information becomes available or if I am asked to consider additional information. I further reserve the right to consider and comment on any expert opinions, statements, or testimony offered by the Petitioner in this matter.

II. BACKGROUND AND QUALIFICATIONS

1. My qualifications are stated more fully in my curriculum vitae (CV). See Ex. A. I am an expert in the field of engineering, mechanical design, bioengineering, ergonomics, and product design, among other fields. I have a B.S. in Bioengineering, an M.S. in Industrial Engineering, and a Ph.D. in Interdisciplinary Engineering, and I am a Certified Professional Ergonomist. I have been working in the fields of ergonomics, mechanical engineering and industrial design for thirty years and I am currently the Department Head, Full Professor and

Director of the Center For Worker Health at the Texas A&M Health Science Center, School of Public Health, Environmental and Occupational Health Department.

2. I have taught graduate and undergraduate courses in engineering, ergonomics, human factors, consumer product and occupational safety and industrial design, among others; I regularly advise and train master's level graduate students and Ph.D. candidates; and have been an author of peer-reviewed journal articles and presented my research at numerous conferences. I have received awards for my work in ergonomics and industrial design, including several ADEX awards for Design Excellence and a Gold Award at NeoCon. I am an inventor or co-inventor of twenty-three (23) U.S. patents and several pending patent applications, all in the fields of mechanical engineering, ergonomics and industrial design for transportation, furniture and other human powered equipment not necessarily covered by patents. I was recently selected by the National Academy of Inventors as a Fellow. At Texas A&M, I operate a 3D print lab and design studio and act as a member of the Texas A&M System Inventor Council.

3. I was an officer and lead designer for Neutral Posture Ergonomics (dba Neutral Posture) where we specialized in ergonomic seating and computer accessories including sit/stand solutions, treadmill desks, active motion seating and custom ADA related accommodations. I was also the founder of PositiveMotion,

Stand2Learn and most recently the WellbeingCode and HumanateDigital LLC. All of these companies focused on unique movement solutions for adults, office workers and students to offset the negative effects of sedentary lifestyles.

4. I have been retained as an expert in a variety of cases and have testified as an expert both at depositions and arbitrations. A listing of my previous testifying experience is included in my CV.

5. My compensation for this Investigation is \$400 per hour for consulting work and \$800 per hour for testimony, plus expenses. My compensation does not depend upon the conclusions I reach, the substance of my analysis, or the outcome of this case.

III. MATERIALS CONSIDERED

6. The analysis that I provide in this Declaration is based on my experience, as well as the documents I have considered, including the '843 patent.

7. I have also reviewed the materials listed below.

8. I have reviewed the Exhibits identified in Petitioner's Exhibit list, listed below, as well as the file history of the '843 Patent (Ex. 2003):

Exhibit No.	Description
1001	US Patent No. 11,849,843 (“843 Patent”)
1002	Declaration of Nathan J. Macdonald
1003	Attachment 1 to Macdonald Declaration – Nathan Macdonald’s Curriculum Vitae
1004	Attachment 2 to Macdonald Declaration – Nathan Macdonald’s Previous Testimony
1005	Attachment 3 to Macdonald Declaration – Nathan Macdonald’s Reviewed Information
1006	Attachment 4 to Macdonald Declaration – Fundamental Concepts Regarding Invalidity
1007	Attachment 5 to Macdonald Declaration – Lindahl in View of Yamamoto, and in Further View of Clark with the Knowledge of a POSITA
1008	Attachment 6 to Macdonald Declaration – Clarke in View of Lindahl and in Further View of Clark with the Knowledge of a POSITA
1009	Attachment 7 to Macdonald Declaration – Huang (2014 Published Application) in View of Clarke and in Further View of Clark with the Knowledge of a POSITA
1010	Attachment 8 to Macdonald Declaration – Yamamoto in View of Zhang and in Further View of Clark with the Knowledge of a POSITA
1011	WO Patent No. 9117906 (“Lindahl”)
1012	US Patent No. 4,574,785 (“Yamamoto”)
1013	US Patent No. D308,537 (“Clark”)
1014	US Patent No. 3,282,566 (“Clarke”)
1015	US Patent No. 2014/0041554 (“Huang”)
1016	CN Patent No. 203934825 (“Zhang”)

IV. RELEVANT LEGAL PRINCIPLES

9. I am not an attorney. In preparing and expressing my opinions and considering the subject matter of this case, I am relying on certain basic legal principles that counsel have explained to me. These principles are discussed below.

A. Person Having Ordinary Skill In The Art

10. I am informed that a “person of ordinary skill in the art” (“POSITA”) refers to a hypothetical person who is presumed to have known the relevant art at the time of the invention. I understand there are multiple factors relevant to determining the level of ordinary skill in the pertinent art, including (1) the levels of education and experience of persons working in the field at the time of the invention; (2) the sophistication of the technology; (3) the types of problems encountered in the field; and (4) the prior art solutions to those problems.

11. I am well acquainted with the subject matter of the ’843 patent. I have direct experience with, and am capable of, rendering an informed opinion on what the level of ordinary skill in the art was for the relevant field as of the priority date of the ’843 patent.

12. I understand that Petitioners and their declarant, Nathan J. Macdonald, argue that a POSITA would be a person having “have at least a bachelor’s degree in Mechanical Engineering (or another technical field) and at least 2 years of experience in consumer product design.” Pet. at 17-18.

13. Neither Petitioner nor its declarant, however, sets forth any facts that support Petitioner’s proposed level of ordinary skill in the art. For example, the declaration acknowledges that many factors are relevant to determining what level of skill would have been ordinary (*see id.* at 16-17), but fails to explain how any of

those factors, in the context of the claimed invention, support Petitioner's proposal. Nevertheless, for the limited purposes of the Board's institution consideration of the Petition for this case, the Patent Owner does not contest the Petitioner's proposed level of ordinary skill in the art

14. Nevertheless, I am informed that for the limited purposes of the Board's institution consideration of the Petition, Patent Owner will not contest at this time, and will instead presume, the Petitioners' proposed level of ordinary skill in the art. While I believe my experience and expertise in the art to which the '843 patent relates are beyond that of a hypothetical POSITA, I consider myself competent to offer opinions as to what the understanding of such a POSITA would be, and unless otherwise indicated herein, the opinions I offer are from the perspective of a POSITA

B. Claim Construction

15. I have been informed by counsel that for the purposes of post grant review, claim terms are construed or interpreted according to their ordinary and customary meaning as would have been understood by a POSITA, in light of the patent specification and prosecution history, unless the inventor has set forth a special meaning for a term in the patent. I have also been informed that claim terms only need to be construed to the extent necessary to address the patentability issues raised in the PGR petition.

C. 35 U.S.C § 103 (Obviousness)

16. I have been informed that a claimed invention is unpatentable for obviousness if the differences between the invention and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a POSITA. I have been informed by counsel that the obviousness analysis takes into account factual inquiries including the level of ordinary skill in the art, the scope and content of the prior art, and the differences between the prior art and the claimed subject matter

17. I also understand that to combine the disclosures of prior art references for purposes of an obvious analysis, a POSITA must have had an apparent reason to combine those elements in the fashion claimed by the patent. Such reasons or rationales for combining references may include the following: (a) combining prior art elements according to known methods to yield predictable results; (b) simple substitution of one known element for another to obtain predictable results; (c) use of a known technique to improve a similar device (method or product) in the same way; (d) applying a known technique to a known device (method or product) ready for improvement to yield predictable results; (e) choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; and (f) some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art

reference or to combine prior art reference teachings to arrive at the claimed invention.

18. I understand that it is improper to combine references where the references “teach away” from their combination. In general, “teaching away” can involve some criticizing, discrediting, misdirecting (that is, directing in a direction

V. EACH OF PETITIONER’S GROUNDS FAIL TO DEMONSTRATE THAT IT IS “MORE LIKELY THAN NOT THAT AT LEAST ONE CHALLENGED CLAIM IS UNPATENTABLE”

19. I note that my analysis herein addresses certain aspects of Petitioner’s and Mr. Macdonald’s statements, and, at this early stage of the case, I reserve the right to amend or update my analysis if this case proceeds Petitioner’s asserted.

20. In my opinion, the references cited by Petitioner either fail to disclose, teach, or suggest all limitations of the claims-at-issue. In addition, Petitioner’s proposed combinations would improperly render the asserted references unsatisfactory for their intended purposes, and/or improperly change their principles of operation. Moreover, Petitioner’s, and its declarant’s, *KSR* allegations are conclusory and without factual support. That is, Petitioner and its declaration argue that a POSITA would have combined the asserted references because such combinations are allegedly “less expensive,” “more versatile,” allow for “maximum compactness,” provide “easier access,” afford “greater optionality,” etc. *See e.g.*, Pet. at 66-67. Such arguments, however, rely solely on the testimony

of Petitioner's declarant, where neither Petitioner nor its declarant corroborates such testimony with any citations to evidentiary support, much less evidentiary support available at the time of the effective filing date of the '843 patent. Thus, Petitioner's (and its declarant's) arguments with respect to alleged motivations to combine are completely conclusory with no supportive facts for Patent Owner's or the Board's evaluation. If Petitioner's statements were credited, then any petitioner (for any petition) could satisfy its Section 42.104(5) burden by merely making such conclusory arguments without providing supportive facts.

A. Ground 1: Petitioner Fails to Establish that Lindahl in View of Yamamoto and in Further View of Clark Renders Claims 1-3, 6-14, and 16-17 Obvious

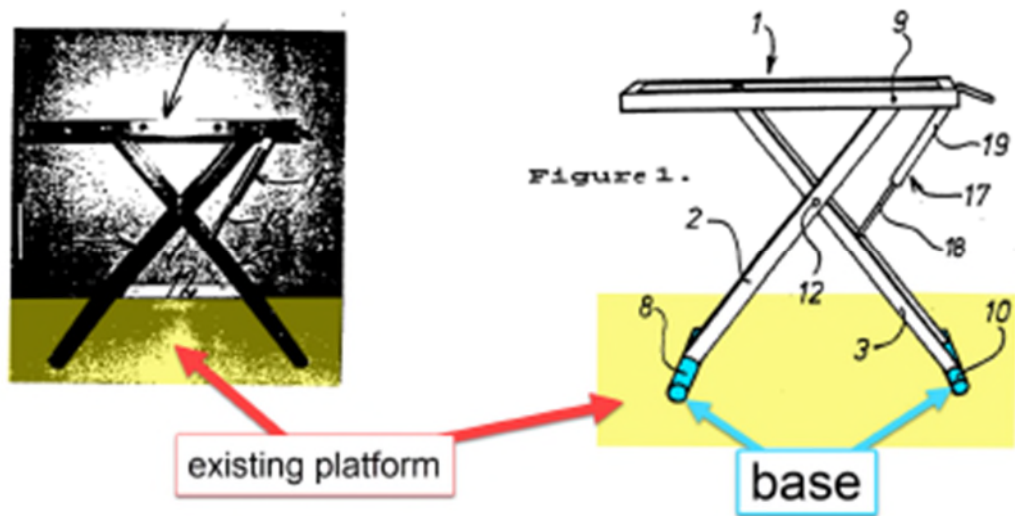
21. Petitioner makes redundant contentions for independent claims 1 and 16, which are the only independent claims asserted for Ground 1. For at least the following reasons, Patent Owner respectfully submits that Petitioner has failed to demonstrate that it is more likely than not that claims 1 and 16, and therefore their respective dependent claims, are unpatentable.

1. “a base pivot point fixed relative to the base and connecting the base and the first set of pivot arms” (see Pet. at 42, element “1d4”)

22. Each of independent claims 1 and 16 recite, in part, “*a base pivot point fixed relative to the base and connecting the base and the first set of pivot arms.*” Petitioner proposes that the combination of Lindahl and Yamamoto teaches

this element. Petitioner does not rely on any other references to meet its burden with respect to this element. The Petition itself (*see* pp. 42-43 (element “1d4”)) is unclear as to what exactly from the disclosure of either Lindahl and/or Yamamoto meets this element, much less how Lindahl and/or Yamamoto would be combined to meet this claim element.

23. With respect to Lindahl, Petitioner does not argue that Lindahl teaches this element. In fact, Petitioner acknowledges that Lindahl cannot have this element because, instead of using “*a base pivot point*” (as recited in the claim) Lindahl’s alleged “base” instead uses “transverse rods” that sit on an underlying support surface. *See* Pet. at 38 (Lindahl discloses “transverse rods that support[] the stand against the underlying support surface”). Petitioner acknowledges this in its annotated images:



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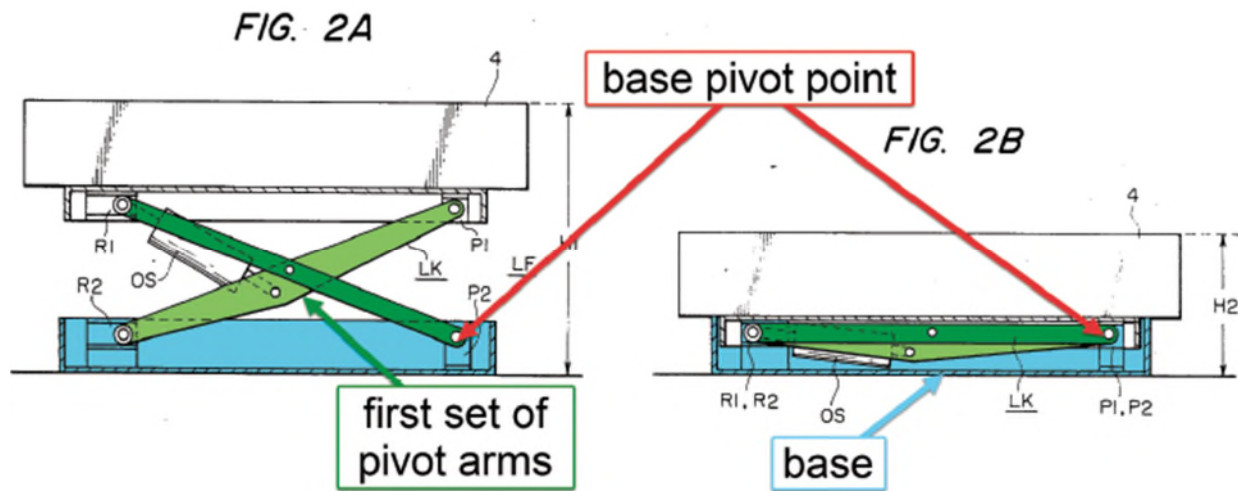
Pet. at 37 (Petitioner's annotated image arguing Lindahl's transverse rods 8, 10 are the alleged "base").

24. Lindahl's disclosed invention is differently configured to use the transverse rods (items 8 and 10 in the above image) that sit on an underlying support surface, and fails to include any "*base pivot point*," much less the entirety of this element, reciting "*a base pivot point fixed relative to the base and connecting the base and the first set of pivot arms*," as recited by claim 1. In my opinion, Lindahl simply does not disclose, teach, or suggest this claim element.

25. Mr. Macdonald also does not argue that Lindahl somehow includes this element. *See* Ex. 1007 at 16-17 (as cited by Petitioner for this element, but where Petitioner's declarant fails to argue that Lindahl includes this element).

26. Instead, Petitioner argues that Yamamoto teaches this element. Petitioner does not explain in its Petition how or where Yamamoto teaches this element. Petitioner includes a citation to Yamamoto at 1:63-2:3 and its declarant's report. Pet. at 42 (citing Ex. 1007 at 16-17). Petitioner's declarant cites the same quote (i.e. Yamamoto at 1:63-2:3), and emphasizes the disclosure regarding Yamamoto's Figure 2: ***The lifter LF includes a link mechanism LK having bearings P1 and P2 fixed to ends thereof and rollers R1 and R2 on opposite ends thereof which are movable along a guide rail.*** Ex. 1007 at 17 (original emphasis). Such disclosure, however, fails to disclose at least the claim element reciting that a

“base pivot point” is “*fixed*” relative to the base. Instead, Yamamoto’s disclosure states that Yamamoto’s “link mechanism LK” has bearings P1 and P2 that are themselves “fixed” (not that there are any “base pivot points” fixed relative to the base). Petitioner’s declarant’s own images show this:



Ex. 1007 at 17. As shown, the item “LK” is a “link mechanism” that is described as fixed to bearing P1, P2. What Yamamoto does not expressly disclose, however, is whether bearings P1, P2 are in fact “*fixed*” relative to the base (as required by this element). It could be, for example, that bearings P1, P2 are not fixed, and instead move as the “LK link mechanism.”

27. Petitioner (and Mr. Macdonald) cites to no other portion of Yamamoto to support this element. Nor can they. Yamamoto is silent with respect to this element. Moreover, Petitioner’s declarant does not go so far as to argue that Yamamoto specifically teaches the claim element reciting a “base pivot point”

fixed relative to the base. Instead, Petitioner’s declarant differently argues that the “base pivot point” more generally “connects” with Yamamoto’s base. *See* Ex. 1007 at 17 (“Yamamoto discloses a base pivot point which *connects* the base and the first set of pivot arms.”) (emphasis added). In my opinion, this is not what the claim element recites. I note that Petitioner does not recite the claim terms themselves and provides no construction to interpret the meaning of the claim term to support its argument.

28. Instead, Petitioner is relies on its Mr. Macdonald’s testimony (without more), where Petitioner’s declarant argues that “[i]t is a required part of any scissor lift mechanism that is fixed to a base as it is one of the main supports for the entire lift mechanism.” Ex. 1007 at 17. First, however, such testimony is uncorroborated by any support from either Yamamoto or Lindahl. Second, neither Petitioner nor its declarant attempts to show how such elements are somehow inherent, *i.e.*, necessary, for Yamamoto’s operation. Still further, such argument is disproved by Petitioner’s own cited art, *i.e.*, Lindahl itself does not “require” (as alleged by Petitioner’s declarant) a “base pivot point” fixed relative to a base. To the contrary, in my opinion Lindahl does not disclose or teach use of “a bas pivot point” at all, much less a base pivot point *fixed* relative to a base. Instead, Lindahl demonstrates that use of a “base pivot point” fixed relative to a base is not somehow “required” or otherwise inherent or necessary to achieve a scissor lift mechanism.

29. Here, Lindahl (as cited by the Petitioner itself) illustrates that it is not necessary for Yamamoto to have a base pivot point “*fixed*” relative to the base. Instead, as Lindahl teaches, there can be lift mechanisms that do not use a fixed base pivot point. Thus, Petitioner has failed to show how these elements are somehow necessarily taught by Yamamoto.

30. In my opinion, Petitioner also fails to identify how or why a POSITA would modify Lindahl to include the base of Yamamoto, as required to demonstrate obviousness.

31. For at least the above reasons, Petitioner fails to meet its Section 42.104(b)(4) burden for “a base pivot point fixed relative to the base and connecting the base and the first set of pivot arms.”

2. No Motivation to Combine

32. Petitioner relies on its proposed combination of Lindahl and Yamamoto for the entirety of its Ground 1 argument. As discussed above, at least because the proposed combination of Lindahl and Yamamoto does not disclose, teach, or suggest all elements of the Asserted Claims (as discussed above), there can be no combination of Lindahl and Yamamoto that would cure this deficiency.

33. In any event, in my opinion Petitioner also fails to demonstrate that a POSITA would have been motivated to combine references for this Ground for at least the following reasons:

a. The Proposed Modification of Lindahl and Yamamoto Improperly Renders the Prior Art Unsatisfactory for its Intended Purpose, and further improperly Changes the Principle of Operation of these References

34. In my opinion, Petitioner's proposed modifications would improperly render the Lindahl and/or Yamamoto combined device unsatisfactory for its intended purpose and/or improperly change its principle of operation. If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there can be no suggestion or motivation to make the proposed modification. M.P.E.P. § 2143.01(V) (The Proposed Modification Cannot Render the Prior Art Unsatisfactory for its Intended Purpose); *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984) (finding no suggestion to modify a prior art device where the modification would render the device inoperable for its intended purpose).

35. In addition, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the prior art references are not sufficient to render the claims prima facie obvious. M.P.E.P. § 2143.01 (VI) (The Proposed Modification Cannot Change the Principle of Operation of a Reference); *see In re Ratti*, 270 F.2d 810, 813 (CCPA 1959) (holding that a proposed combination of references is not proper where it would change the basic principles of operation of

one of the references); *Plas-Pak Indus., Inc. v. Sulzer Mixpac AG*, 600 F. App'x. 755, 759 (Fed. Cir. 2015) (“a change in a reference’s ‘principle of operation’ is unlikely to motivate a person of ordinary skill to pursue a combination with that reference”).

36. **First**, as discussed above, neither Petitioner nor its declarant argue that Lindahl discloses, teaches, or suggests the claim element: “*a base pivot point fixed relative to the base and connecting the base and the first set of pivot arms.*” Lindahl teaches its alleged “base” comprises “transverse rods” that sit on an underlying support surface. *See* Pet. at 38 (Lindahl discloses “transverse rods that support[] the stand against the underlying support surface”).

37. By contrast, as discussed above, Yamamoto teaches a “link mechanism LK” that is not configured to use transverse rods to stand against the underlying support surface, as differently taught by Lindahl. Instead, Yamamoto’s “link mechanism LK” includes a different structure, i.e., a set of “bearings P1 and P2 fixed to ends thereof and rollers R1 and R2 on opposite ends thereof which are movable along a guide rail.” As discussed above, Yamamoto does not expressly or inherently disclose or teach “a base pivot point” fixed relative to the base and connecting the base and the first set of pivot arms.

38. Even assuming *arguendo* that such element was met (it is not), unlike Lindahl’s transverse rods that stand against the floor (as admitted by Petitioner),

Yamamoto's link mechanism LK moves along a guide rail and is not designed or otherwise configured to stand against the underlying support surface. In my opinion, modifying the link mechanism LK of Yamamoto to use the transverse rods of Lindahl (to stand against the underlying support surface) would change a principle operation of Lindahl and/or Yamamoto because such modification would require at least the removal of Yamamoto's disclosed guide rail, which Yamamoto expressly discloses that its link mechanism LK requires to operate. This is at least because Yamamoto relies on the link mechanism LK as configured for operating its disclosed bed with a hydraulic cylinder. Ex. 1012 at 2:3-9 ("A hydraulic cylinder OS serves as a vertical drive unit for extending and retracting the link mechanism LK. Vertical movement of such a vertically movable fluidized bed with a patient thereon while the beads 5 are in a flowing condition, however, results in the danger of causing the patient to move unnecessarily on the bed").

39. For the same reasons, removal of Yamamoto's disclosed guide rail would improperly render Yamamoto device unsatisfactory for its intended purpose because removal of the guide rails would cause the link mechanism LK disclosed by Yamamoto to fail at least because the rollers R1 and R2 would no longer have guides within which to move.

40. Further, modification of Lindahl to use link mechanism LK would require removal of Lindahl's lower transverse rods, which would change the

principal operation of Lindahl because Lindahl teaches that the transverse rods that sit on the underlying surface work together (“coact”) with upper rods in order to raise and lower Lindahl’s frame-like portion in relation to the underlying support surface. *See* Ex. 1011 at 2:1-10. Removing Lindahl’s lower transverse rods would therefore impact its upper rods, and the ability of the upper rods to “coact” with the frame-like portion, thereby changing Lindahl’s principal operation.

41. For the same reasons, removal of Lindahl’s lower transverse rods that sit on an underlying support surface would improperly render Lindahl unsatisfactory for its intended purpose because removal would cause the operation of the frame-like mechanism to fail, at least because Lindahl teaches that its frame-like mechanism “coacts” based on the movement of the upper rods of Lindahl, which are themselves dependent on the movement of the lower transverse rods. Removal of one of these components would cause the other to fail, and Petitioner does not demonstrate or argue otherwise.

42. Thus, at least for these reasons, because the proposed modification of Lindahl and Yamamoto would change the principal operation of Lindahl (or vice versa for Yamamoto), and/or render the prior art invention being modified (Lindahl or Yamamoto) unsatisfactory for its intended purpose, there can be no suggestion or motivation to make the proposed modification.

43. **Second**, the invention of Yamamoto describes a fluidized bed. Ex. 1012 at 2:12-23 (“Summary of the Invention”). Yamamoto teaches a POSITA that “[t]he present invention [of Yamamoto] relates to a device for controlling the operations of a medical fluidized bed for floating and supporting a human body, for purposes of medical treatment, on a bed of fine particles [*see e.g., id.* (“sand” or “beads”)] subjected to a flowing movement induced by a stream of compressed air diffused upwardly through a diffuser board.” Ex. 1012 at 1:6-11.

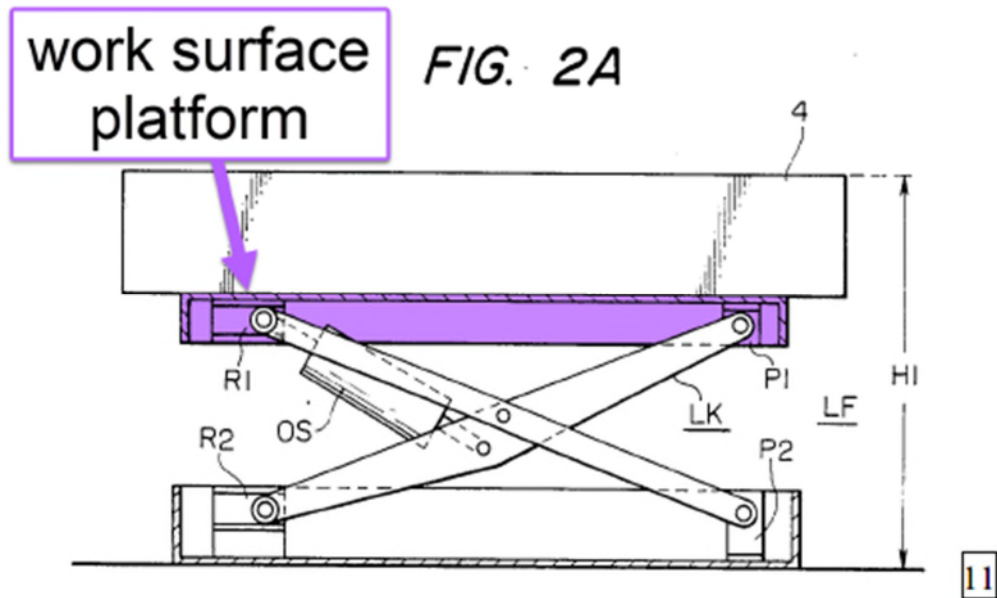
44. In particular, Yamamoto’s bed is a specialized bed configured to prevent the danger of causing a patient to move unnecessarily in the bed, *e.g.*: “Vertical movement of such a vertically movable fluidized bed with a patient thereon while the beads 5 are in a flowing condition, however, ***results in the danger of causing the patient to move unnecessarily on the bed.***” *Id.* at 2:5-9 (emphasis added).

45. Yamamoto attempts to solve the identified danger by disclosing a control device specific to the fluidized bed having the beads, *i.e.*, “a device for controlling the raising and lowering movement of a fluidized bed and which is capable of interlocking or preventing flowing movement of the beads while the bed is being vertically moved to thereby ***eliminating the danger mentioned above.***” *Id.* at 2:14-17 (emphasis added).

46. By contrast, Lindahl discloses or teaches no such specialized medical fluidized bed, and much less a specialized medical fluidized bed configured for attachment to a top surface of Lindahl.

47. In my opinion, modifying Yamamoto to remove its specialized medical fluidized bed (and replacing it with a tabletop for use in caravans and motorhome as taught by Lindahl) would change a principal operation of Yamamoto because such modification would eliminate a component of Yamamoto described as part of the “present invention” (as described above), and also, *e.g.*, “[i]n accordance with the present invention, when the bed is being moved upwardly or downwardly, the flowing movement of beads is temporarily stopped to put the patient's body at rest in a manner as if confined in a sand mold. After the movement of the head has been completed, the beads are allowed to flow again.” Ex. 1012 at 2:18-23.

48. Further, Petitioner mistakenly argues (and commits error in fact) that Yamamoto includes a top surface (shown in purple, as reproduced from the Petition):



Pet. at 35.

49. However, it is easily seen (even in Petitioner’s above image) that such purple highlighted portion is not a top surface, or “work surface platform,” at least because the specialized medical fluidized bed (referred to as “tank 4” by Yamamoto¹) covers the purple highlighted portion. Thus, given that the purple highlighted portion is covered, it cannot be a “work surface platform.”

50. For the same reasons, removal of Yamamoto’s specialized medical fluidized bed (*e.g.*, by replacement of a conventional tabletop) would improperly render Yamamoto’s device unsatisfactory for its intended purpose at least because such removal would no longer serve to allow Yamamoto to be “capable of

¹ Ex. 1012 at 1:29-31 (“A tank 4 integral with the closed chamber 2 contains the bead bed S and the diffuser board 3.”).

interlocking or preventing flowing movement of the beads while the bed is being vertically moved to thereby eliminating the danger mentioned above.” Ex. 1012 at 2:14-17.

51. Further, with respect to Lindahl, modifying Lindahl with Yamamoto’s link mechanism LK, related hydraulic cylinder, bearings P1 and P2, rollers R1 and R2, and guide rail of Yamamoto changes the principal operation of Lindahl and/or makes Lindahl unsatisfactory for its intended purpose at least because all of these components (as taught by Yamamoto) defeat the purposes of Lindahl, where “[t]he object of the present invention is to eliminate this problem [the complicated and time-consuming process of lowering and raising a motorhome tabletop] and to provide a tabletop stand which can be readily handled and manoeuvred [*sic*].” Ex. 1011 at 1:23-25. Adding these various components of Yamamoto would frustrate this purpose, where such components of Yamamoto are designed to raise and lower a heavy fluidized bed, filled with sand and/or beads and carrying a human patient, but where adding these components to Lindahl would cause the invention of Lindahl to become heavy, unwieldy, and not “readily handled and manoeuvred [*sic*],” especially within the confines of a motorhome or caravan, which Lindahl expressly teaches as the location for operation of its invention.

52. Thus, for at least these reasons, because the proposed modification of Lindahl and Yamamoto would change the principal operation of Lindahl (or vice

versa for Yamamoto), and/or render the prior art invention being modified (Lindahl or Yamamoto) unsatisfactory for its intended purpose, there can be no suggestion or motivation to make the proposed modification.

b. Failure to Provide a Sufficient Reason to Combine/KSR

53. I have been informed that to support a conclusion of obviousness it is not enough to show merely that the prior art includes separate references covering each separate limitation in a challenged claim. *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). Obviousness additionally requires that a person of ordinary skill at the time of the invention “*would have* selected and combined those prior art elements in the normal course of research and development to yield the claimed invention,” not merely whether separate references taught the components of a given claim. *Id.*; *see also Orexo AB v. Actavis Elizabeth LLC*, 903 F.3d 1265, 1273 (Fed. Cir. 2018) (“The question is not whether the various references separately taught components of the ’330 Patent formulation, but whether the prior art suggested the selection and combination achieved by the ’330 inventors.”).

54. In determining whether there would have been a motivation to combine prior art references to arrive at the claimed invention, it is insufficient to simply conclude the combination would have been obvious without identifying any

reason why a person of skill in the art would have made the combination.

Metalcraft of Mayville, Inc. v. Toro Co., 848 F.3d 1358, 1366 (Fed. Cir. 2017).

55. Here, contrary to the Federal Circuit’s case law on obviousness, Petitioner commits legal error by repeatedly stating that the combination of alleged references would have been “mundane” and “easy” because (allegedly) the components as claimed by the ’843 patent were “commonplace.” *See, e.g.*, Pet. at 13 (“the ’843 Patent should never have been issued because it attempts to claim mundane components that are (and have) been easily incorporated into numerous mechanical designs as a matter of ordinary practice in the field of engineering.”); *id.* at 15 (“Gas springs are commonplace components which are easily incorporated into various mechanical designs as a matter of ordinary engineering practice.”). At the same time, however, Petitioner provides no factual support for its arguments, including whether such arguments apply for the effective filing date of the ’843 patent, including how such components would have been somehow “commonplace” or “easy” to incorporate at the effective filing date. I understand this is contrary to Federal Circuit law, *i.e.*, “whether a skilled artisan would be motivated to make the proposed combination to arrive at the claimed invention—is a factual one that we review for substantial-evidence support.” *St. Jude Medical, LLC v. Snyders Heart Valve LLC*, 977 F.3d 1232, 1242–43 (Fed. Cir. 2020).

56. For example, Petitioner merely alleges that one skilled in the art *could* have replaced the “feet” (*i.e.* transverse rods 8, 10) of Lindahl with the base of Yamamoto to avoid “damage to the supporting floor,” (*see* Pet. at 66) but do not provide any reasonable explanation *why* one skilled in the art would be motivated to do so at the effective filing date of the ’843 patent. Similarly, Petitioner merely alleges that one skilled in the art *could* “foreseeably” have placed the “printer stand” of Clark on top of Lindahl or Yamamoto, and that this is well-known and customary, without providing any reasonable explanation *why* one skilled in the art would be motivated to do so at the effective filing date of the ’843 patent. *See* Pet. at 67, 69. Thus, Petitioner fails to provide substantial evidence support for its proposed combination for Ground 1.

57. Patent Owner provides the below additional reasons demonstrating the insufficiency of Petitioner’s arguments with respect to Ground 1.

58. **“Highly compatible” or analogous art is not enough.** Petitioner contends that Lindahl and Yamamoto “both describe vertically adjustable platforms that use a scissor linkage and cylindrical actuator ... [and therefore] are highly compatible with each other.” Pet. at 65. However, demonstrating a reference is analogous art or relevant to the field of endeavor of the challenged patent is not alone sufficient to establish that one of ordinary skill would have had reason to combine its teachings with other prior art in the manner set forth in the claim. *See*

*Securus Techs., Inc. v. Global Tel*Link Corp.*, 701 F. App'x 971, 977 (Fed. Cir. 2017) (“a broad characterization of [prior art references] as both falling within the same alleged field . . . without more, is not enough for [Petitioner] to meet its burden of presenting a sufficient rationale to support an obviousness conclusion”). Mere compatibility of the references is likewise not sufficient. *Personal Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 993 (Fed. Cir. 2017) (it is not enough to show that “a skilled artisan, once presented with the two references, would have understood that they could be combined”). Here, Petitioner’s arguments that Lindahl and Yamamoto are highly compatible do not show how a POSITA would in fact physically achieve the alleged combination, which is especially fatal given that the lifting mechanisms of Lindahl and Yamamoto differ substantially, and that Petitioner fails to explain how a POSITA could have modified one or the other reference to achieve the same height adjustment mechanism recited by the elements of the claims of Ground 1.

59. **A POSITA would not be motivated to use a base in all instances.**

Petitioner’s Ground 1 (obviousness) theory depends on whether a POSITA would have been motivated to use a base **in all instances**. In particular, Petitioner contends: a “POSITA would have been motivated to combine the base of Yamamoto with the Lindahl mechanism to gain additional advantages,” because, according to Petitioner, legs (like those of Lindahl), cause concentrated pressure at

certain points, which damages carpet, and which would have allegedly motivated a POSITA incorporate the “broad base surface” “taught by Yamamoto.” Pet. at 66.

But other than a conclusory declaration (with no factual support), Petitioner has not supported its theory that a broad base surface is somehow always superior or more useful than legs. Such failure is fatal to Petitioner’s challenge of obviousness. *See* 37 C.F.R. 42.204(5). *See Johns Manville Corp.*, IPR2018-00827, Paper 9 at 11-12 (2018) (informative decision) (denying institution and finding that “Petitioner’s argument assumes that all thermoset binders are useful in a fiberglass insulation product of the type disclosed in Srinivasan—an assumption that Petitioners fail to support.”). In my opinion, a broad base surface would not somehow be superior in **all instances** compared to legs. For example, Petitioner concedes that Lindahl’s disclosure “is configured to be used in caravans and motorhomes”—exactly the type of situation where a broad base surface might be inferior to legs or even inoperable, at least because of the confined space (*e.g.*, a caravan or motorhome) within which the invention of Lindahl is taught to be deployed. Pet. at 37. Similarly, in my opinion, a POSITA would not look to the medical bed of Yamamoto for a “carpet” application, as Yamamoto’s medical application calls for hard surfaces like tile for easy clean up and decontamination, not inferior surfaces such as carpet.

60. **Modifications that a POSITA could have made do not give rise to a Motivation to Combine.** In my opinion, the legs of Lindahl fulfil Lindahl’s intended purpose of being “configured to be used in caravans and motorhomes” and supporting it against the underlying support surface, which “object has been achieved with a stand ... [that] includes at least two leg members which are hinged or pivotally connected together such as to *enable* the parts of said *leg members* located on mutually opposite sides of the hinge or pivot to be *moved towards and away* from one another in a scissor-like fashion.” See Pet. at 37; Ex. 1011 at 1:26-35; *id.* at 2:5-8; *id.* at 3:11-20 (“This enables the two ends of respective pairs of bars 4, 5; 6, 7 to be *moved towards and away from* each other in a scissor-like fashion”). The gas spring of Lindahl further fulfils Lindahl’s intended purpose of eliminating the time-consuming and complicated process of raising and lowering the stand.

61. Yamamoto’s broad “stationary base” with rollers and guide rail, and Yamamoto’s complicated “external hydraulics system,” however, would prevent such functionality because it would be unsuitable for use in caravans or motorhomes. Moreover, in my opinion, incorporating the Yamamoto design for use in a motorhome would add significant weight, reducing fuel economy and raising the center of gravity, and thereby the tip instability for cornering while in motion. A vehicle designer would not be willing to compromise the safety of the

motorhome while in motion merely to make raising and lowering the stand easier.

Id.

62. Thus, at least for these reasons, in my opinion a POSITA would not have been motivated to replace Lindahl's legs with Yamamoto's broad "stationary base."

63. Thus, at least for these reasons, in my opinion a POSITA would not have been motivated to combine the "printer stand" of Clark with the "motorhome stand" of Lindahl or the "fluidized medical bed" of Yamamoto.

Signature Page Follows.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on April 28, 2025

A handwritten signature in red ink, appearing to read "Mark E. Benden". The signature is written in a cursive style with a prominent initial "M".

Mark Benden

EXHIBIT A



Mark Benden, PhD, CPE

Department Head for Environmental & Occupational Health,
School of Public Health
Texas A&M Health Science Center

Contact

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Professional Networks

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[Research Gate](#)
[Scholars @ TAMU](#)
[Google Scholar](#)
[Google Patents](#)

Educational Qualifications

PhD – Dec 2006
Texas A&M University,
Interdisciplinary Engineering
Specialization in Ergonomics

MS – May 1992
Texas A&M,
Industrial Engineering
Specialization in Human Factors
and Ergonomics

BS – May 1990
Texas A&M,
Bioengineering Specialization in
Human Factors

CPE – Oct 1994
Board of Certification in
Professional Ergonomics, Inc.

Impacts

Contributions to Ergonomic Health and Safety

- Research has resulted in the development of the ANSI/BIFMA X6.1-2012 Educational Seating Standard, the ANSI/BIFMA G1 Ergonomic Standard, the improvement of the ANSI/BIFMA X5.1-2012 Seating Standard and the creation of the ANSI/BIFMA X5.11 Large Occupant Office Seating Standard.
- First patent, a 4-way adjustable office chair arm (1990) was the top approach to ergonomic chair arms for decades.
- According to Patent Vector, his 25 patented inventions are some of the most highly cited patents in the field of ergonomics and **rank above 82% of ALL US patents ever issued for impact**, with an estimated lifetime value of over \$2 billion.

Stand-Biased Desk Interventions in Children and Adults

- Developed the theory of *Technology Induced Inactivity* for children and adults to describe effects of sedentariness in modern-day life on health outcomes.
- Discovered novel methods of monitoring children activity in situ by use of fNIRS in schools as part of a 450-student intervention over two academic calendar years. His work in this area has received international acclaim and his publications on this topic are in the top 1% of altmetrics.
- His top paper on adult sedentarianism is still #1 in the *IIE Transactions on Occupational Ergonomics and Human Factors* with an Altmetric score of 929 - the top 0.003 percentile of articles all-time and #18 for TAMU all-time.

Technology Advancements in Physical Activity and Energy Expenditure Measurement

- Many of his early designs were breakthroughs in the field of ergonomics and are now industry standards that have been deployed in millions of units of products sold.
- Pioneered objective mass data collection methods for employers with sensors on desks and computers, completely changing the potential for understanding the effectiveness of interventions, establishing a dose response rate, and office ergonomic monitoring.
- Consistently pushes the field of wearable monitoring for physical activity to new methods, techniques and tools by developing and testing new sensors.

Professional Experience

Texas A&M Health Science Center, School of Public Health, Environmental & Occupational Health Department	Sep 2015 to present
<i>Department Head, Full Professor & Director of the Ergonomics Center (dba Center for Worker Health as of 7/24)</i>	
<i>Interim Department Head Health Promotion & Community Health Sciences Dept</i>	
<i>Full Professor, Industrial & Systems Engineering Department</i>	
<i>Full Professor, Multi-Disciplinary Engineering Department</i>	
<i>Faculty Fellow, Center for Remote Health Technologies & Systems</i>	
<i>Faculty Fellow, Center for Community Health Development</i>	
<i>Faculty Fellow, Center for Health System & Design</i>	
<i>Faculty Fellow, Center for Population Health & Aging</i>	
<i>Associate Professor & Director of the Ergonomic Center</i>	Sep 2013 - Sep 2015
<i>Assistant Professor & Co-Director of the Ergonomics Center</i>	Jul 2008 – Sep 2013
HumanateDigital, Inc. , (Faculty led Startup Company)	Sep 2022 to Present
<i>CTO & Co-Founder</i>	
Stand2Learn, Inc. , (Faculty led Startup Company)	Sep 2011 to Jan 2018
<i>CEO & Founder</i>	
<i>Majority Share Holder</i>	
Texas A&M Health Science Center, School of Public Health, Environmental & Occupational Health Department	Sep 2013 to Sep 2015
<i>Associate Professor & Director of the Ergonomics Center</i>	
Texas A&M Health Science Center, School of Rural Public Health, Environmental & Occupational Health Department	Jul 2008 to Sep 2013
<i>Assistant Professor & Co-Director of the Ergonomics Center</i>	
Neutral Posture, Inc.	Oct 1998 to Jun 2008
<i>Executive Vice President of Engineering Development & Sales</i>	
Neutral Posture Ergonomics, Inc.	Feb 1998 to Oct 1998
<i>Director of Engineering and Development</i>	
Johnson & Johnson Safety & Industrial Hygiene	Mar 1997 to Feb 1998
<i>Staff Ergonomic Engineer Franchise Safety Manager, Cordis, Inc.</i>	
Johnson & Johnson Safety & Industrial Hygiene	May 1994 to Mar 1997

Senior Ergonomic Engineer

ETHICON, Inc. <i>Ergonomic Engineer</i>	May 1992 to May 1994
M. E. Benden Company <i>Ergonomic Design Consultant</i> <i>Expert Witness</i>	Sept 1988 to present
Pathway Industries, Inc. <i>Ergonomic Consultant</i>	Jun 1991 to Jun 1992
United State Army Reserve and Texas Army National Guard <i>First Lieutenant – last rank before moving to Inactive Reserve</i>	Dec 1985 to Dec 1993

Funded Research

Seedling Intramural Grant TAMU HSC Contract: \$75,000 <i>PI: Benden</i> <i>Emergency Procedures Development</i>	Jun 2024 to Jun2025
PCC/TTI Assessment of Temporary Portable Rumble Strips And Retrieval Methods TTI grant:\$75,000 <i>PI: Benden</i>	April 2023-Dec 2023
NIOSH - CDC Occupational Safety and Health Training Center NIOSH Grant: \$750,000 <i>PI: Benden</i>	Mar 2023 to Dec 2028
General Motors Contract: \$180,000 <i>PI: Benden</i> <i>Ergonomic Evaluation of the Arlington assembly plant production line</i>	Dec 2022 to Jun 2024
Seedling Intramural Grant TAMU HSC Contract: \$100,000 <i>PI: Benden</i> <i>Digital Human Clinical receptionist</i>	Jan 2023 to Jan 2024
Seedling Intramural Grant TAMU HSC	Jan 2023 to Jan 2024

Contract: \$150,000

Co- PI: Benden

College of Nursing digital human build for cancer training in rural settings

USPHS Grant

Mar 2022 to Mar 2023

Contract: \$380,000

PI: Benden

Training Modernization in partnership with UNMC

**Southwest Center for Occupational and Environmental Health
Education and Research – Pilot Project**

Jun 2021 to Jul 2022

Contract: \$10,000

PI: Benden

Musculoskeletal discomfort, physical activity, and workstation type: A follow-up study of traditional office workers after long-term remote work

T3 Intramural Grant TAMU

Mar 2021 to Dec 2022

Contract: \$30,000

Co- PI: Benden

Autonomous Vehicles for the Elderly

Clapp & Lauinger LLP

Mar 2018 to May 2019

Contract: \$225,000

PI: Benden

Research on Suitable Seating for Clerks in California

T3 Intramural Grant TAMU

Mar 2019 to Dec 2020

Contract: \$30,000

PI: Benden

Opioid Detection Software and Hardware

BP

Mar 2019 to Dec 2020

Contract: \$11,000

PI: Benden

Computer Workstation Remote Worker Study

Varidesk, Inc.

Mar 2018 to Feb 2021

Contract: \$75,000

PI: Benden

Sit-Stand Desk Utilization Research

TAMU Research Development Fund

Apr 2017 to present

Intramural Funding: \$1,200,000

PI: Palma; Role: Co - PI

Integrating Biometric Responses to Human Behavior

<p>NIOSH - CDC Occupational Safety and Health Training Center NIOSH Grant: \$750,000 <i>PI: Benden</i></p>	<p>Mar 2018 to Dec 2023</p>
<p>TAMU Center for Remote Health and Systems Technology Contract: \$10,000,000 <i>PI: Cote; Role: Co-I Education Thrust for 3+2 BSE/MPH Occ NSF ERC PATHS-UP</i></p>	<p>Aug 2017 to Aug 2022</p>
<p>TAMU Health Science Center Occupational Health & Safety Program NIOSH Grant: \$400,000 <i>PI: Benden</i></p>	<p>Jul 2014 to Dec 2017</p>
<p>ODOT Contract: \$65,000 <i>PI: Pickens; Role: Co-PI Ergonomic Evaluation of Ohio Department of Transportation Maintenance Workers</i></p>	<p>Sep 2016 to Dec 2017</p>
<p>Varidesk, Inc. Contract: \$50,000 <i>PI: Benden Gamification of Software Monitored Results to Increase the Usage of Sit-Stand Desks</i></p>	<p>Sep 2017 to Dec 2017</p>
<p>Office of Ergonomic Research Contract: \$35,000 <i>PI: Benden Use of Sit-Stand Workstations: Does the Implementation of Behavioral Interventions Increase the Usage of Sit-Stand Desks?</i></p>	<p>Jan 2016 to Dec 2017</p>
<p>Frito Lay Contract: \$5,000 <i>PI: Benden Distribution Center Ergonomic Evaluation</i></p>	<p>Jan 2017 to May 2017</p>
<p>Virgi & Associates Contract: \$20,000 <i>PI: Benden Sit-Stand Checkout Clerks Evaluation</i></p>	<p>Jun 2017 to Aug 2017</p>
<p>Clapp & Lauinger LLP Contract: \$25,000 <i>PI: Benden Sit-Stand 3D Rendering and Biomechanical Review</i></p>	<p>Jun 2017 to Aug 2017</p>

<p>Haworth Contract: \$5,000 <i>PI: Benden</i> <i>Expert Report on State of the Science in Sedentary Behavior</i></p>	<p>Feb 2017 to Aug 2018</p>
<p>CDC to Positive Motion Grant: In-Kind <i>PI: Westbrook; Role: Subcontract PI</i> <i>NIH Commercialization Accelerator Program Grant – Marketing Consultations</i></p>	<p>Sep 2017 to Sep 2018</p>
<p>Herman Miller Contract: \$65,000 <i>PI: Mehta; Role: Co-I</i> <i>Cognitive ergonomics assessment of office furniture</i></p>	<p>Feb 2017 to Sep 2017</p>
<p>Holly Frontier Contract: \$35,000 <i>PI: Benden</i> <i>Ergonomic assessment of Asphalt Refineries in New Mexico</i></p>	<p>Jan 2016 to Dec 2016</p>
<p>Johnson & Johnson Contract: \$5,000 <i>PI: Benden</i> <i>Ergonomics Buying Guide</i></p>	<p>Feb 2017 to Dec 2017</p>
<p>Linak Contract: \$25,000 <i>PI: Benden</i> <i>Software Support for Ergonomic Sit-Stand Study</i></p>	<p>Jan 2016 to Sep 2016</p>
<p>TAMUS Chancellor’s Office Grant: \$25,000 <i>PI: Benden</i> <i>Oil & Water Sourcing</i></p>	<p>Feb 2017 to Aug 2017</p>
<p>CDC to Positive Motion Grant: \$1,000,000 <i>PI: Westbrook; Role: Subcontract PI</i> <i>Development of a Stand-Biased School Desk to Reduce Childhood Obesity</i></p>	<p>Sep 2013 to Sep 2016</p>
<p>ExxonMobil Contract: \$25,000 <i>PI: Benden</i> <i>Cataloging Modern Office Jobs via ACGIH, TLV-HAL Ratings</i></p>	<p>Apr 2013 to Apr 2014</p>

<p>NIH – Eunice Kennedy Shriver National Institute of Child Health & Human Development Grant: \$400,000 <i>PI: Benden</i> <i>Brazos Partnership for Childhood Obesity Research</i></p>	<p>Jan 2012 to Dec 2012</p>
<p>CDC to Positive Motion Grant: \$150,000 <i>PI: Wilke; Role: Subcontract PI</i> <i>Development of a Stand-Biased School Desk to Reduce Childhood Obesity</i></p>	<p>Sep 2011 to Sep 2012</p>
<p>Texas Transportation Institute University Transportation Center for Mobility Grant: \$105,000 <i>PI: Benden</i> <i>Teen Driver Cell Phone Blocker</i></p>	<p>Jan 2010 to May 2011</p>
<p>United Way Brazos Valley Grant: \$5,000 <i>PI: Benden</i> <i>Sit-Stand Classroom Project</i></p>	<p>Jun 2009 to May 2010</p>
<p>TAMU Health Science Center Occupational Health & Safety Program NIOSH Grant: \$400,000 <i>PI: Congleton; Role: CO-I</i></p>	<p>Jun 2010 to Jul 2014</p>
<p>DHHS CDC – National Center for Chronic Disease Prevention and Health Promotion Prevention Research Center For Community Health Development Grant: \$5,000 <i>PI: McLeroy; Role: PI</i> <i>Investigational pilot grant on Ambicycle development and use</i></p>	<p>Feb 2009 to Sep 2009</p>

Publications

Peer Reviewed Journal Publications

57. Jennifer C. Palmer, Annabel L. Davies, Francesca Spiga, Berit L. Heitmann, Russell Jago, Carolyn D. Summerbell, Julian P.T. Higgins, Arne Astrup, Valter Cordeiro Barbosa Filho, Mark E. Benden, et al. Do the effects of interventions aimed at the prevention of childhood obesity reduce inequities? A re-analysis of randomized trial data from two Cochrane reviews, *eClinicalMedicine*, Volume 81, 2025, 103130, ISSN 2589-5370, <https://doi.org/10.1016/j.eclinm.2025.103130>

56. Olokunlade, Temitope; Benden, Mark E.; Han, Gang; Sherman, Ledric; Oloruntoba, Oluyomi; Jessa, Igwesiri; Igbo, Author; Nwadije, Johncross; Mustapha, Toriq; Nwifo, Adaeze; Ogunbamowo, Adetoun; and Smith, Matthew L. (2024) "Fall-Related Risk Factors among Older Men: A Scoping Review," *Health Behavior Research: Vol. 7: No. 4*. <https://doi.org/10.4148/2572-1836.1264>
55. Zhu, Tingyu, Lan Xue, Carmen Tekwe, Keith Diaz, Mark Benden, and Roger Zoh. "Clustering Functional Data With Measurement Errors: A Simulation-Based Approach." *Statistics in Medicine* (2024) <https://doi.org/10.1002/sim.10238>
54. K.L. Wasserstein, M.L. Shah-Hartman, W. Gavin Luzier, E.W. Schaefer, M.E. Benden, D.L. Sekhar, Parent and child opinion on the use of standing desks in the classroom, *Preventive Medicine Reports* (2024), doi: <https://doi.org/10.1016/j.pmedr.2024.102875>
53. Junho Park, Maryam Zahabi, He Huang, Mark Benden, A novel approach for predicting usability of upper limb prostheses, *Applied Ergonomics*, Volume 120, 2024, 104344, ISSN 0003-6870, <https://doi.org/10.1016/j.apergo.2024.104344>
52. Lynn Salzar ,Tricia; Aguilar ,Kaysey N.; Smith ,Matthew Lee; Pickens ,Adam; Han, Gang; Anderson ,Grace; Benden ,Mark E.(2024) Stand-Capable Workstations Reduce Occupational Sedentary Time Among Administrative Workers doi: 10.1080/24725838.2024.2362720; IISE Transactions on Occupational Ergonomics and Human Factors; <https://doi.org/10.1080/24725838.2024.2362720>
51. Honvoh Gilson D. , Zoh Roger S. , Gupta Anand , **Benden Mark E.** , Tekwe Carmen D. Modeling approaches for assessing device-based measures of energy expenditure in school-based studies of body weight status, *Frontiers in Applied Mathematics and Statistics*, Vol.10, 2024 <https://www.frontiersin.org/journals/applied-mathematics-and-statistics/articles/10.3389/fams.2024.1399426> DOI=10.3389/fams.2024.1399426 ISSN=2297-4687
50. Kaysey N. Aguilar, Matthew Lee Smith, Stephanie C. Payne, Hongwei Zhao, **Mark Benden**, Digital human ergonomics training for remote office workers: Comparing a novel method to a traditional online format, *Applied Ergonomics*, Volume 117,2024, 104239,ISSN 0003-6870,<https://doi.org/10.1016/j.apergo.2024.104239>.
49. Junho Park, Maryam Zahabi, Xi Zheng, Marcia Ory, **Mark Benden**, Anthony D. McDonald & Wei Li (2024) Automated vehicles for older adults with cognitive impairment: a survey study, *Ergonomics*, 67(6), 831-848. DOI: [10.1080/00140139.2024.2302020](https://doi.org/10.1080/00140139.2024.2302020)
48. Roh T, Esomonu C, Hendricks J, Aggarwal A, Hasan NT, **Benden M.** (2023) Examining workweek variations in computer usage patterns: An application of ergonomic monitoring software. *PLOS ONE* 18(7):

287976. <https://doi.org/10.1371/journal.pone.0287976>

47. Junho Park, Maryam Zahabi, Skylar Blanchard, Xi Zheng, Marcia Ory, **Mark Benden**, A novel autonomous vehicle interface for older adults with cognitive impairment, *Applied Ergonomics*, Volume 113, 2023, 104080, ISSN 0003-6870, <https://doi.org/10.1016/j.apergo.2023.104080>

46. Kesiena O, Atarere J, **Benden M**. The impact of multiple regions of pain and work-life balance among healthcare workers. *Work*. 2023;75(1):357-362. doi: 10.3233/WOR-211239. PMID: 36591670.

45. Matthew Smith, Chung Lin Kew, Caroline Bergeron, Martha Parker, Oluyomi Oloruntoba, Kaysey Aguilar, Mark Benden, Ashley Merianos, CORRELATES OF JOB SATISFACTION AMONG FULL-TIME EMPLOYED OLDER ADULTS WITH CHRONIC CONDITIONS, *Innovation in Aging*, Volume 6, Issue Supplement_1, November 2022, Page 680, <https://doi.org/10.1093/geroni/igac059.2500>

44. Sarnosky K, **Benden M**, Sansom G, Cizmas L, Regan AK. Impact of workplace displacement during a natural disaster on computer performance metrics: A 2-year interrupted time series analysis. *Work*. 2022;71(2):465-470. doi: 10.3233/WOR 210707. PMID: 35095008; PMCID: PMC8925109.

43. **Benden, M.**, Mehta, R., Pickens, A. *et al*. Health-related consequences of the type and utilization rates of electronic devices by college students. *BMC Public Health* 21, 1970 (2021). <https://doi.org/10.1186/s12889-021-11975-3>; <https://rdcu.be/cA5Sp>

42. William D. Johnson, S. Camille Peres, **Mark E. Benden**, Ranjana K. Mehta, Adam Pickens, Matthew Lee Smith, Noelle Sweany, Mallory A. Johnson, Lingual and non-lingual safety training methodology effectiveness: Does language of origin impact effectiveness, *International Journal of Industrial Ergonomics*, Volume 86, 2021, 103183, ISSN 0169-8141,

41. Kesiena O, Ajayi KV, Rene A, **Benden M**. Sociodemographic and work-related predictors of chronic lower back pain in the United States: the 2018 National Health Interview Survey data. *Public Health*. 2021 Aug 1;198:30-34. doi: 10.1016/j.puhe.2021.06.015. Epub ahead of print. PMID: 34348193.

40. Sarnosky, K., **Benden, M.**, Cizmas, L., Regan, A., & Sansom, G. "Remote Work and the Environment: Exploratory Analysis of Indoor Air Quality of Commercial Offices and the Home Office." *International Journal of Env. Mon. and Analysis*. (2021) ISSN Print: 2328-7659

39. Juha Baek , Bita A. Kash , Xiaohui Xu , **Mark Benden** , Jon Roberts & Genny Carrillo (2020): Pediatric asthma hospitalization: individual and environmental characteristics of high utilizers in South Texas, *Journal of Asthma*, DOI: 10.1080/02770903.2020.1827424
38. Goodrich, K., **Benden, M.**, Munch, J. and Wamwara, W. (2020), "Will college students take a stand? Effects of health orientations on purchase decision factors for standing desks", *Journal of Product & Brand Management*, Vol. 30 No. 7, pp. 949-963. <https://doi.org/10.1108/JPBM-07-2019-2481>
37. Baek, J.; Kash, B.A.; Xu, X.; **Benden, M.**; Roberts, J.; Carrillo, G. Effect of Ambient Air Pollution on Hospital Readmissions among the Pediatric Asthma Patient Population in South Texas: A Case-Crossover Study. *Int. J. Environ. Res. Public Health* **2020**, *17*, 4846.
36. Baek, J.; Kash, B.A.; Xu, X.; **Benden, M.**; Roberts, J.; Carrillo, G. Association between Ambient Air Pollution and Hospital Length of Stay among Children with Asthma in South Texas. *Int. J. Environ. Res. Public Health* **2020**, *17*, 3812
35. Rhee, J., & **Benden, M. E.** (2020). Stand-Biased Desk Intervention on Sleep Quality of High School Students: A Pilot Study Using Tri-Axial Accelerometry. *International Journal of Environmental Research and Public Health*, *17*(1), 37. <https://doi.org/10.3390/ijerph17010037>
34. Sharma, P. P., Mehta, R. K., Pickens, A., Han, G., & **Benden, M. E.** (2019). Smart Software Can Increase Sit-Stand Desk Transitions During Active Computer Use. *International Journal of Environmental Research and Public Health*, *16*(13), 2638. <https://doi.org/10.3390/ijerph16132438>
33. Tekwe, C. D., Zoh, R., Yang, M., Carroll, R., Honvoh, G., Allison, D., **Benden, M. E.**, & Xue, L. (2019). Instrumental variable approach to estimating the scalar-on-function regression model with measurement error with application to energy expenditure assessment in childhood obesity. *Statistics in Medicine*, *38*(20), 3764-3781. <https://doi.org/10.1002/sim.8179>
32. Garrett, G., Zhao, H., Pickens, A., Mehta, R., Preston, L., Powell, A., & **Benden, M. E.** (2019). Computer-based Prompt's impact on postural variability and sit-stand desk usage behavior; a cluster randomized control trial. *Applied Ergonomics*, *79*, 17-24. <https://doi.org/10.1016/j.apergo.2019.04.003>.
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Selected Conference Papers

Chung, W., Kew, C. L., Bergeron, C., Parker, M., Oloruntoba, O., Aguilar, K., Benden, M., & Merianos, A. (2022). EXPLORING ADJUSTMENT TO RETIREMENT: LEISURE IN THE LIVES OF FIRST-GENERATION KOREAN IMMIGRANT MEN. *INNOVATION IN AGING*. 6, 680-681.

Towne, S., Li, Y., Lee, S., Smith, S., Han, G., Du, Y., **Benden, M.**, & Ory, M. (2018) Changes in Physical Activity Associated with a Novel Health and Wellness Program for At-Risk Older Individuals, *Innovation in Aging*, 2(1), 739.

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Benden, M., Mehta, R., & Shortz, A. (2018, Jun 3-6) *A three year randomized controlled trial of a standing desk intervention in a high school of 450 students to evaluate the impact on sedentary behavior, cognition and test scores* [Conference session]. International Society of Behavioral Nutrition and Physical Activity Annual Meeting, Hong Kong, China.

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Benden, M. (2018, Jun 3-6) *1-year RCT of Sedentary Behavior with Computer based monitoring and prompting* [Conference session]. International Society of Behavioral Nutrition and Physical Activity Annual Meeting, Hong Kong, China.

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Benden, M., Zhao, H., & Schneider, D. (2015, Jun 3-6) *A 2-year evaluation of a high school standing desk intervention to reduce sedentary behavior in US children* [Conference session]. International Society of Behavioral Nutrition and Physical Activity Annual Meeting, Edinburgh, Scotland, 2015.

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Pickens, A. W., & Benden, M. E. (2013). Curriculum Development for HF/E Graduate Students. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting, Proceedings of the Human Factors and Ergonomics Society*. 57(1), 452-456

Benden, M., Congleton, J.J. (2007, Mar 13) *Chair Specifications and Testing for Big & Tall Seating* [Conference session]. Tenth Annual Applied Ergonomics Conference.

Benden, M. (2003, Oct 15-18) *Use of Three Dimensional, Knitted Fabric Yields Ergonomic Benefits in Upholstery Work – A Two Year Follow Up Study* [Conference session]. Annual Association of Canadian Ergonomist's Conference, Toronto, Canada.

Benden, M. (2003, Mar) *The Patent Process for Ergonomic Products* [Conference session]. Annual Applied Ergonomics Conference, Dallas, TX, USA.

Patents

U.S. Patents

Benden, M., “Ergonomic Footrest Apparatus for a Chair,” United States Patent, No. 6142571.

Benden, M., Boenigk, R.C., Belt, K.A., Ebner, D.W., “Lumbar Pump Assembly for a Chair,” United States Patent, No. 6220663.

Congleton, J.J., Boenigk, R.C., Boenigk, B.A., **Benden, M.**, “Ergonomic Armrest Assembly,” United States Patent, No. 6296312.

Benden, M., Smithey, N.M., “Air Pump Assembly for a Chair,” United States Patent, No. 6290295.

Benden, M., Smithey, N.M., “Onboard Instruction Guide,” United States Patent, No. D458777S.

Benden, M., Smithey, N.M., “Computer Accessories and Mouse Deck,” United States Patent, No. D463441S.

Benden, M., Congleton, J.J., Smithey, N.M., “Support Apparatus for a Chair and Keyboard,” United States Patent, No. 6604786.

Benden, M., “Improved footrest for a Chair – Fring™,” United States Patent, No. 6607246.

Congleton, J.J., **Benden, M.**, Boenigk, R.C., Guillen, J.C., “Support for a Seating Device – Abstool™,” United States Patent, No. 6877812.

Benden, M., Smith, C.A., Congleton, J.J., Johnson, L., “Support Assembly for a Seating Device – NeXtep™,” United States Patent, No. 7036886.

Benden, M., Congleton, J.J., Smitih, C.A., “Vertical Adjustment Apparatus for a Keyboard – StandUp™,” United States Patent, No. 7048236.

Congleton, J.J., **Benden, M.**, Boenigk, R.C., Guillen, J.C., “Support for a Seating Device – AbStool™, Dual Use, 4 positions,” United States Patent, No. 7104606.

Benden, M., Chapman, A.K., Sanchez, M.R., “Seating Device – Balance™ Chair Ergo,” United States Patent, No. D541061.

Benden, M., Chapman, A.K., Sanchez, M.R., “Support for a Seating Device – Balance™ Conference,” United States Patent, No. D543038.

Benden, M., Smith, C.A., “Nposition Footrest for Ntune Seating System,” United States Patent, No. D557513.

Benden, M., Chapman, A.K., Smithey, N.M., “Elemental Aluminum Keyboard Tray,” United States Patent, No. D588145.

Benden, M., “Student Desk with Stool,” United States Patent, No. D649369.

Benden, M., “Student Desk with Seat,” United States Patent, No. D649368.

Benden, M., Wilke, E., “Lightweight Transportation Device,” United States Patent, No. 8303011.

Benden, M., “Versatile Student Desk,” United States Patent, No. 9254037.

Benden, M., “Adjustable Footrest for Adjustable-Height Desk,” United States Patent, No. 9961990.

Benden; Mark E., “Adjustable Height Desk having a Deployable Floor Mat,” United States Patent, No. 10426260

Benden; Mark E., “Adjustable Height Desk having a Deployable Floor Mat,” United States Patent, No. 11,006,744 B2

Benden; Mark E., Jarman, Jack; “Deployable Backrest, Footrail and Anti-Fatigue Mat Ergonomic Office Stool” United States Patent No. 12,226,031

As of **Jul. 1, 2024**, three additional US patent applications were pending

International Patents:

Benden, M., Smith, C.A., Congleton, J.J., Johnson, L., “Support for a Seating Device,” CA 2505225.

Benden, M., Smith, C. A., Congleton, J.J., “Vertical Adjustment Apparatus for a Keyboard,” CA 2486459.

Disclosures to Texas A&M:

- Benden, M.,** Wilke, E., “AmbiCycle – Novel Patient Transport,” TAMU 2830.
- Benden, M.,** Fink, R., “Child/Pet Present Sensing and Fail Safe Control System,” TAMU 2956.
- Benden, M.,** Fink, R., “Cell Phone Interruption Device,” TAMU 2957.
- Benden, M.,** Pickens, A., Hamid, K., “Surgical Exoskeleton Support Device,” TAMU 2949.
- Benden, M.,** Miller, K., Speer, B., “Low Force, Rapid Deployment Tool for Closure of QD Hose Valve,” TAMU 3014.
- Benden, M.,** “Ergonomic Holder for Tablet Reading and Computerized Devices,” TAMU 3172.
- Burdine, J., **Benden, M.,** “Adult Walk or Sit,” TAMU 3230.
- Burdine, J., **Benden, M.,** “Waterfall Pool Chlorinator,” TAMU 3271.
- Benden, M.,** “Stand-Biased Desk for Schools,” TAMU 3058.
- Benden, M.,** “Young Adult, Stand-Biased School Desk,” TAMU 3399.
- Benden, M.,** “Height Adjustable Desk with Integrated, Automatically Deployable Footrest and Privacy Screen for Sitting and Standing Positions,” TAMU 3468.
- Benden, M.** “Adjustable Height Desk Having a Deployable Floor Mat TAMU 4533
- Benden, M.,** Aguilar K., Jebson, L.; Digital Human-Work Force Solution for Healthcare Clinical Practices TAMU 6171HSC23
- Benden, M.,** Jarman, J.; “Deployable Backrest, footrail and Anti-fatigue mat ergonomic office stool, TAMU 13260-P274V1
- Benden, M.,** Rhee, J., “Passive Biometric Sensor for Computer Users via Keyboard and Peripheral Input Device Monitoring,” TAMU 5224

Presentations and Invited Lectures

Keynote Addresses

Benden, M. (2019, August). *The Wedge Formation for Entrepreneurs* [Keynote address]. McFerrin Center Entrepreneurship Bootcamp for Veterans, College Station, TX, USA.

Benden, M. (2019, August). *Sedentary Behavior and Air Quality of Home Office Workers* [Keynote address] Office Relief Summer Lecture Series, San Leandro, CA, USA.

Benden, M. (2017, March). *The State of the Science in Sedentary Behavior Research* [Keynote address]. Arizona State University Wellness Summit, Tempe, AZ, USA.

Benden, M. (2016, February). *Occupational Health Updates* [Keynote address]. ORCHSE Washington, D.C., USA.

Benden, M. (2014, October) Advances in Ergonomics Monitoring and Assessment, Puget Sound Ergonomic Roundtable

Invited Lectures and Featured Speeches

Benden, M. (2019, August). *California Suitable Seating Case Law Experiences* [Featured speaker]. Sacramento Ergonomics Roundtable, Sacramento, CA, USA.

Benden, M. (2018, March). *State of the Science of Sedentary Behavior Research* [Featured speaker]. Applied Ergonomics Conference, Atlanta, GA, USA.

Benden, M. (2017, July). *Computer Prompts for Reducing Sedentary Behavior* [Invited lecture]. Ergo X of HFES, Tampa Bay, FL, USA.

Benden, M. (2017, January). *School PA Research* [Invited lecture]. Charter Schools Conference Washington, D.C., USA.

Benden, M. (2017, January). *Research Methods for Computer Tracking of Office Worker Behaviour* [Invited lecture]. OERC Marconi Conference, Galveston, TX, USA.

Benden, M. (2016, August). *Invited lecture*. Austin Ergonomic Round Table, Austin, TX, USA.

Benden, M. (2016, August). *Invited Lecture*. Sacramento Ergonomic Round Table, Sacramento, CA, USA.

Benden, M. (2016, August). *Invited Lecture*, Bay Area Ergonomic Round Table, San Francisco, CA.

Benden, M. (2016, May). *Invited Lecture*. AIHA Conference, Baltimore, MD, USA.

Benden, M. (2012, September). *Stand-biased Classrooms* [Invited lecture]. CDC, Atlanta, GA, USA.

Benden, M. (2010, March). *Ambicycle Development and Testing* [Invited lecture]. Applied Ergonomics Conference, San Antonio, TX, USA.

Presentation

Oloruntoba, O., Parker, M. K., Maddock, J., Benden, M. E. Prevalence and correlates of musculoskeletal discomfort among remote office workers in the United States. Applied Ergonomics Conference. March 27- 30, 2023. New Orleans, LA.

Smith ML, Kew CL, Bergeron CD, Parker MK, Oloruntoba O, Aguilar K., Benden ME, Wilson, MG, Merianos, AL. Correlates of job satisfaction among full-time employed older adults with chronic conditions. Gerontological Society of America Annual Conference. November 2-6, 2022. Indianapolis, IN.

Sarnosky, K., Cizmas, L., & **Benden, M.** (2019, March) *Indoor Quality Impact on Ergonomics & Productivity in the Remote Work Force* [Paper presentation]. Applied Ergonomics Conference, New Orleans, LA, USA.

Benden, M. (2018, August) *One-year workplace interventions using software prompts to increase and sustain electric sit-stand desk utilization via objectively monitored desk utilization software* [Paper presentation]. International Ergonomics Association, Florence, Italy.

Sharma, P. & **Benden, M.** (2018, March) *6 Month Evaluation of Computer Prompts and Gamification of Sit/Stand Data* [Paper presentation]. Applied Ergonomics Conference, Atlanta, GA, USA.

Sharma, P., Owen, W. & **Benden, M.** (2017, March) *Sit-Stand Desks: Can We Increase Their Use with Computer Software?* [Paper presentation]. Applied Ergonomics Conference, Orlando, FL, USA.

Bridges, L. & **Benden, M.** (2017, March) *Remedy Interactive Study to Determine Musculoskeletal Issues from Desktop Software* [Paper presentation]. Applied Ergonomics Conference, Orlando, FL, USA.

Garrett, G., Mehta, R. & **Benden, M.** (2017, March) *Cognitive Benefits of Sit-Stand Desk Workstation* [Paper presentation]. Applied Ergonomics Conference, Orlando, FL, USA.

Garrett, G. & **Benden, M.** (2015, March 17th) *Thinking on your feet can be productive* [Paper presentation]. Applied Ergonomics Conference, Nashville, TN, USA.

Pickens, A. W. & **Benden, M.** (2013, September-October). *Curriculum Development for HF/E Graduate Students: Lessons Learned in an Ongoing Effort to Educate and Meet Industry Demands* [Paper presentation]. 57th HFES Conference, San Diego, CA, USA.

Kress, M. & **Benden, M.** (2013, March) *6-Month Follow-Up: Comparison of Sit-to-Stand and Stand-biased Desks in a Call Center* [Paper presentation]. Applied Ergonomics Conference, Orlando, FL, USA.

Benden, M., Ekelund, E., Hinkley, T., & Hinkson, E. (2012, May) *A Behavioral Epidemiological Perspective on Sedentary Behavior in Children: Health, Measurement, Correlates, Interventions. & Advanced Measurement Methods for Sedentary Behavior in Children* [Paper presentation]. International Society of Behavioral Nutrition and Physical Activity, Austin, TX, USA.

Miller, K. & **Benden, M.** (2012, March) *Industry/University Collaborative* [Paper presentation]. Applied Ergonomics Conference, Nashville, TN, USA.

Benden, M. & Bosen, D. (2012, March) *Obesity in the Workplace: Changes and Solutions* [Paper presentation]. Mastertrack for Applied Ergonomics Conference, Nashville, TN, USA.

Smith, M.L., **Benden, M.**, Lindner, J. R., Cotton, C. P., Henry, M., Dickerson, J. B., & Congleton, J.J. (2012, March) *Perceptions of texting while driving among parents of teen drivers: Does terminology make a difference?* [Paper presentation]. Academy of Health Behavior Annual Conference, Austin, TX, USA.

Benden, M., Morales, M., & Wendel, M. (2011, October-November) *Dynamic Classrooms Utilizing Stand-biased Desks to Reduce Childhood Obesity* [Paper presentation]. 139th APHA Annual Meeting in Washington, D.C., USA.

Morales, M., **Benden, M.**, & Jones, P. (2011, April) *Dynamic Classroom Environments to Reduce Childhood Obesity* [Paper presentation]. Regional HRES Conference, Houston, TX, USA.

Benden, M. (2000, April) *A new vehicle design for rural and urban patient transport* [Paper presentation]. UTCM Mobility Colloquium, College Station, TX, USA.

Benden, M. (2010, March) *A Case Study In The Design And Development of An Ergonomic Vehicle For The Transport of Rural Patients* [Paper presentation]. Applied Ergonomics Conference, Mar 2010.

Benden, M. (2009, April) *Stand to Lose* [Paper presentation]. Salud Y Seguridad Laboral, Panama.

Benden, M. (2009, April) *Industrial Ergonomics* [Paper presentation] Salud Y Seguridad Laboral, Panama.

Benden, M. (2009, March) *Stand-Biased Workstations for Control of Office Worker Obesity* [Paper presentation]. Applied Ergonomics Conference, Reno, NV, USA.

Benden, M. (2009, March). *Ergonomic Expert Roundtable Lecture – Occupational Obesity* [Paper presentation]. Applied Ergonomics Conference, Reno, NV, USA.

Benden, M. (2009, November). *Lean Patient Handling* [Paper presentation]. National Ergonomics Conference, Las Vegas, NV, USA.

Benden, M., & Parker, M. K. (2000, March). *Benefits of Three Dimensional Knitted Fabric on Chair Manufacturing* [Paper presentation]. Applied Ergonomics Conference, Orlando, FL, USA.

Selected Poster Presentations

Maddock, J.E., Chen, Y., Yeh, S.Y., Oloruntoba, O., & Benden, M. (2023). Nature contact and active living among remote workers. Poster presented at the Annual Active Living Conference, Bethesda, MD

Smith, M. L., Kew, C. L., Bergeron, C. D., Parker, M. K., Oloruntoba, O., Aguilar, K. N., **Benden, M. E.**, Wilson, M. G., & Merianos, A. L. (2022). Correlates of job satisfaction among full-time employed older adults with chronic conditions. Gerontological Society of America Annual Conference. November 2-6, 2022. Indianapolis, IN.

Benden, M. (2017, March). *Ergonomic Expert Roundtable Lecture – Occupational Obesity* [Poster presentation]. Applied Ergonomic Conference, Orlando FL

Smith, M. L., **Benden, M.**, Cotton, C. P., Henry, M., & Congleton, J. J. (2012, January). *Texting while driving behaviors and related influences: Parent-teen concordance from the parental perspective* [Poster presentation]. Annual International Conference on the Health Risks of Youth, San Juan, Puerto Rico.

Benden, M., Wendel, M. L. & Smith, M. L. (2011, January). *Modifying classroom environments to reduce health risk among elementary students* [Poster presentation]. Annual International Conference on the Health Risks of Youth, Cancun, Mexico.

Congleton, J. J., Craig, B., **Benden, M.** & Parker, M. (2003, October). *Current and Future Office Ergonomic Trend* [Poster presentation]. 47th Annual Human Factors and Ergonomics Conference, Denver, CO, USA.

Teaching Experience

Courses Taught:

PHEO 655 – Human Factors
PHEO 682 – System Safety
PHEO 679 – Upper Extremity
Ergonomics
PHEO 678 – Low Back/Whole
Body Ergonomics

PHEO 681 – EOH Seminar
PHEO 680 – Capstone
PHEO 691/791 –
Research/Doctoral Study
PHEO 685 – Directed Study
PHLT 445 – Senior Capstone

Doctoral Students Advised/Mentored

Dr. Kristen Miller, DrPh
Chair, graduated 2012

Dr. Meghan Wernicke, DrPh
Chair, graduated 2014

Dr. Parag Sharma
DrPh Chair, graduated 2018

Dr. Greg Garrett, DrPh
Chair, graduated 2019

Dr. Kamrie Sarnosky, DrPh
Chair, graduated 2019

Dr. Tricia Salazar, DrPh
Chair, graduated 2020

Dr. Paul Ritchey, DrPh
*Committee member, graduated
2018*

Dr. NoYoung Yu, DrPh
*Committee member, graduated
2018*

Dr. Elizabeth Cuevas, PhD
BMES
*Committee member, graduated
2018*

Dr. Trey Roady, PhD ISEN
*Committee member, graduated
2018*

Dr. Dawn Dakuri, DrPh
*Committee member, graduated
2020*

Dr. William Johnson, DrPh
*Committee member, graduated
2019*

Dr. Juha Baek, DrPh
*Committee member (graduated
2020)*

Dr. Linda Bridges, DrPh
Chair (2022)

Dr. Kaysey Aguilar, DrPh
Chair (2022)

Ashley Shortz, DrPh
*Current committee member
(expected graduation 2022)*

Dr. Junho Park -PhD ISEN
Committee member (2022)

Lauren Williams - DrPh *Current committee member (expected graduation 2024)*

Dr. Yibo Zhu, PhD ISEN
Committee member (2021)

Sloane Hoyle, DrPh
Current committee member (expected graduation 2024)

Yu Zhou, PhD ISEN
Current committee member (expected graduation 2023)

Whitney Mantooth, PhD ITDE
Current chair (expected graduation 2024)

Yehee Park ISEN PhD
Committee Member expected graduation 2025

Niosh Basnet ISEN PhD
Committee Member expected graduation 2025

Pronob Biswas PhD ITDE
Current chair (expected graduation 2026)

Andrea Porter PhD ITDE
Current Chair (expected graduation 2026)

Adam Neiss PhD ITDE chair
(expected graduation 2025)

Dr. Vanessa Nasr PhD ISEN
Committee member Dec 2024

Ashif Hossain ISEN PhD
Committee Member expected graduation 2025

Masters Thesis Students Advised

Vicki Torres, MSPH
Committee member, 2010

John Smith, MSPH
Committee member, 2010

Lexie Mancuso, MSPH
Chair, 2010

McKenzie Henry, MSPH
Chair, 2010

Kristin Miller, MSPH
Chair, 2011

Megan Morales, MSPH
Chair, 2011

Jase Perry, MSPH
Chair, 2012

Angela Marsalia, MSPH
Chair, 2013

Allison Schuelke, MSPH
Chair, 2014

Drew Schneider, MSPH
Chair, 2014

Gulberg Ergin, MS (ISEN)
Co-chair, 2019

Gilson Honvoh, MSPH
Committee member, 2017

Cullen Brown, MS (CPSC)
Committee member, 2017

Jason Noriega, MS (STAT)
Committee member, 2019

Ricardo Munoz Castillo MS
(ETID)Committee member, 2022

Rowland Ramos MS (ETID)
Committee member, 2020

Student Awards

Applied Ergonomics Creativeness in Ergonomics Student Award

Kaysey Aguilar 2023
Tricia Salazar, 2020
Kamrie Sarnosky, 2019
Ashley Shortz, 2018

Greg Garrett, 2015
Meghan Wernicke, 2013
James Stafford, 2012
Kristen Miller, 2011

Ergo Cup – Student Design Award

Meghan Wernicke, Jeff Bauml, Katie Connell, Anthony Onowoku, 2011

Honors and Awards

National Academy of Inventors, Fellow	2023
Applied Ergonomics Conference & Exposition, Conference Chair	2023
National Academy of Inventors, Senior Member	2019
Inc 5000 VET50 List, #35 for Stand2Learn	2019
Inc 5000 Company Honor, Stand2Learn, #567	2018
Innovation Award, Texas A&M System	2018
Aggie 100, Stand2Learn, #5	2018
Delta Omega, Alpha Tau chapter, Public Health Honor Society	2015
EOH Teaching Award, Rural Public Health Student Association	2013-14
Gold Design Award at NeoCon, Guardian™ chair	2013
EOH Teaching Award, Rural Public Health Student Association	2009-10
Platinum ADEX Award, Elemental™ in Design Journal	2008-09

Top 10 Most Innovative Product Designer, <u>Healthcare Design Magazine</u>	2008
NECE Attendees Choice Award, <i>Ntune</i>TM Seating System	2007
Editor's Top 100, <u>Buildings Magazine</u> for <i>Ntune</i>TM Seating System	2007
NECE Attendees Choice Award, Pipette ArmTM	2006
Platinum ADEX Award, NeXtepTM and BalanceTM char in Design Journal	2005-06
NECE Attendees Choice Award, NeXtepTM	2005
Platinum ADEX Award, AbStoolTM and StandUpTM in <i>Design Journal</i>	2004-05
NECE Attendees Choice Award, StandUpTM	2004
NECE Attendees Choice Award, AbStoolTM	2003
IIDEX NeoCon Canada Bronze Award, Most Innovative Product	2003
U.S. Army Distinguished Military Graduate	1990
Distinguished Texas A&M Engineering Student	1988-89
National Distinguished Military Student	1988-89
<i>*Complete list of US Army awards and decorations are available separately</i>	
American National Standard for Human Factors	1988
<i>Member of the Canvass Committee for BSR/HREX 100</i>	

Professional Affiliations

The Texas A&M Telehealth Institute Founding Member	2023-Present
Center for Remote Health Technologies & Systems <i>Member</i>	2013-Present
Center for Population Health & Aging <i>Member</i>	2017-Present
Center for Health Systems & Design <i>Member</i>	2017-Present

Center for Community Health Development <i>Member</i>	2008-Present
Ergonomics Center <i>Executive Director</i>	2015-Present
Office of Ergonomic Research Center <i>Industry partner</i>	1999-2001
NSF Industry University Cooperative Research Center in Ergonomics <i>Industry Partner</i>	1996-1998

Professional Service

Committee Membership

TAMUS Council of Inventors
Member 2023 – Present

Department PhD Committee
Member, 2016-Present

Department Undergraduate Minor Committee
Member, 2016-Present

TAMU Council of Principal Investigators
Representative for SPH, 2018-2019

NEW CEPH Core Phase 2 Committee
Representative for SPH, 2018-Present

SPH Research Committee
Chair, 2012-2016 and 2018-Present

HSC Technology Commercialization Advisory Committee
Chair, 2016-2017; Member, 2016-Present

TAMU System Intellectual Property Constituent Committee
Chair, 2015-2016

TAMU 2030 Vision Committee
Member, 2017-Present

TAMU 2030 Vision – Research Committee

Chair, 2018-Present

TAMU Innovation School

Advisory board and founding member, 2016-Present

Applied Ergonomics Conference Presentations Program

Chair, 2015-2018

Applied Ergonomics Poster Program

Chair, 2018-Present

ANSI/HFES 100 Standards Committee

Member, 2016-2018

ANSI/BIFMA 5.1 Office Seating Standard Committee

Member, 2008-Present

ANSI/HFES 100 Caucus Voting Committee

Appointed member, 2019-Present

ANSI/BIFMA Student Furniture Standards Committee

Member, 2014-2016

BIFMA – G1 Ergonomic Furniture Standard Committee

Member, 2008-Present

BSR/BIFMA X10.1-202X Ergonomics Requirements for Furniture Designed for Computer Use – Voting member, 2019-Present

Stand2Learn, Inc.

CEO & Chairman of the Board, 2012-2018

AEC Conference

Abstract Reviewer, 2008-2015

StandUpKids.org

Advisory Board, 2015-Present

IISE

Member, 2000-Present

HFES

Member, 1992-Present

ASSP

Member, 1992-Present

Grant Reviews

NIOSH – ERC Review Panel

Washington D.C., Spring 2018

NSF, S-STEM Review Panel

Washington D.C., Fall 2012

NSF, S-STEM Review Panel

Washington D.C., Fall 2010

NSF, S-STEM Review Panel

Washington D.C., Fall 2009

NSF, S-STEM Review Panel

Washington D.C., Fall 2008

International – External Dissertation Reviewer

Aminian, S. (2016). *Sedentary Behavior in New Zealand Primary School Children*. [Doctoral Thesis, Auckland University of Technology].

<https://pdfs.semanticscholar.org/a60a/68c8aa6e3309ab897999c8638f478961a4a9.pdf>

Contardo Ayala, A. M. (2019). *The influence of sitting and standing on young people's health*. [Doctoral Thesis, Deakin University]

Contributions to Law in Patent Infringement and Occupational Health

Gibson & Dunn LLP Amazon vs. OSHA (2024) regarding Warehouse distribution center citations, ergonomic consultant

Marshall, Gerstein & Borun LLP FDW vs. Office Kick (2024) regarding adjustable desk patent litigation (deposed expert witness)

Marshall, Gerstein & Borun LLP Sanodesk Co, Ltd Vovomart Ltd vs. Office Kick Inc, (2023) regarding adjustable desk patent litigation (expert report)

Foley & Lardner LLP Hydrow Inc, vs. iFit Health & Fitness Inc.(NordicTrack) 2022 Patent Infringement Case regarding Rowing machines for fitness (expert report)

Dickinson Wright LLP Sky Enterprises vs. Herman Miller Inc (2021)

Patent Infringement Case regarding Ergonomic Seating

McInerney Law, Canela vs. Costco (2021)

Expert witness for greeter and exit checker employees seeking suitable seating options per California wage orders. Including deposition & trial testimony

Williams Hart Boundas Easterby, LLP, Stacy Smith v Mansfield Montessori (2021) Consultant on occupational injury case involving an employee performing lifting tasks with children in a daycare environment

Moss Bollinger, LLP, Silvestro vs. Kaiser Pharmacy (2021)

Expert witness for pharmacists and pharmacy tech employees seeking suitable seating options per California wage orders

Clapp & Lauinger, LLP, Eden Smiles vs. Walgreen Co (2018-2021)

Expert witness for the class action suit by cashiers seeking suitable seating options per California wage orders.

Garland, Samuel & Loeb, P.C., Clonts vs. Reddy (2020)

Elevator Shaft fall case

Boucher, LLP, Northgate Market (2019)

Suitable seating case

Sanford A. Kassel, APLC, Rodriguez vs. Walmart (2019)

Greeters & suitable seating case.

Clapp & Lauinger, LLP, Hall vs. RiteAid (2018)

Research, simulations, and deposition given in this case of clerks versus their company for the right to be seated for part of the work day as needed for their health.

Erise IP, PA, Ironburg vs. Collective Minds (2018)

Expert for Ironburg in a patent infringement case involving hand-held video game controllers.

McInerney Law, Eden Smiles vs. Walgreens (2018)

Expert witness for the class action suit by employees seeking suitable seating options per California wage orders.

Righetti Glugoski, P.C., Brown vs. Walmart (2018)

Expert witness for the class action suit by employees seeking suitable seating options per California wage orders.

Finnell Firm: Milton Finnel Esq., Longhorn Steakhouse vs. Customer (2017)

Represented injured customer in a case involving damaged seating that failed and resulted in significant personal injury.

Righetti Glugoski, P.C., Pickett vs. 99 Cents Only Store (2017)

Expert for checkout clerks versus the company for their right to be seated for part of the work day.

Adam R. Hess, Esq. | Venable, LLP, Varidesk vs. ErgoTron (2016)

Expert for Varidesk in patent infringement case. Testified at Markman Federal Hearing in Washington D.C., Varidesk secured royalties from ErgoTron on all involved patents.

Gark K. Smith Law, PLC, Furlong vs. Fed X (2016)

Expert for employee in occupational injury case. Employee was injured while exiting a plane and lost the ability to be a pilot.

Magenheim & Associates, Monterey Mushroom vs. Holcomb (2016)

Expert for Monterey Mushroom in occupational injury case involving a finger amputation on mushroom processing machinery. Gave report and investigation, along with deposition and testimony at arbitration hearing.

Simmons & Fletcher, (2014)

Deposition, simulations, and case report in forklift decapitation case at central warehouse distribution center.

Banner & Witcoff, LTD, Humanscale vs. Comp X (2011)

Expert consultant in ergonomic patent case involving keyboard tray mechanisms.

Apperson Crump & Maxwell, PLC, (2010)

Expert consultant on personal injury case at a Verizon store involving defective adjustable height stool, resulting in critical injuries to an elderly man.

McCoy Law, PC, (2010)

Witness on occupational injury case involving CNA back injury.

McCoy Law, PC, (2010)

Witness on occupational injury case involving back injury to an oil field drilling rig operator.

McCoy Law, PC, (2010)

Witness on occupational injury case involving acute trauma to a hotel maid.

McGuire Woods, LLP, Rubbermaid vs. Ergotron (2009)

Served as an expert witness in ergonomic patent case involving computer on wheels used in medical facilities.

Licensing of Technology

AmbiCycle to ARV, Inc.

First commercial license secured by a School of Rural Public Health faculty member.

Integrated, Automatically Deployable Foot Rest to NextDesk, Inc.

1 license for US Patent No. 9961990.

IP to Positive Motion, LLC., DBA, and Stand2Learn, LLC. (A faculty lead startup)
4 licenses; More than \$100,000 in royalties have been returned to TAMU for these licenses.

School desks and footrests patents to Varidesk

1 license (master with 5 parts of IP); More than \$100,000 in royalties have been returned to TAMU for these licenses.

Mouse and algorithm AI for detecting health status IP licensed to Well Being Code LLC

Digital Human IP License to Digital Humanate Inc

Testimony to Texas House of Representatives

House Committee on Public Health, Mar 8, 2010

Research Features

Podcasts

EP. 1: THE FUTURE OF ERGONOMICS AND WORKPLACE SAFETY

TAMU Center for Worker Health

<https://www.youtube.com/watch?v=R15f1NMo8bk>

KAMU/NPR - 12/17/2023: Guest- Mark Benden, PhD, CPE, Director of the Ergonomics Center at the Texas A...

<https://www.npr.org/podcasts/1212982454/brazos-matters>

#AppliedErgo2022: Ergonomics to keep workers safe at home

[Problem Solved: The IISE Podcast: #AppliedErgo2022: Ergonomics to keep workers safe at home on Apple Podcasts](#)

ErgoExpo

[Movement at Work](#), Guest

An exploration of new standards, developments, and trends

IISE: Problem Solved Guest

Implementing AI and machine learning to build living systems that can prompt the workforce to move while on the job to achieve optimal productivity on an individual basis, within different types of workspaces. <https://podcast.iise.org/episodes/sit-stand-shake-adjustability-and-ergonomics-with-mark-benden>

Science Sound Off

[Episode 1 – Stand for Your Health](#), Guest

Explaining the science of how people work and how we can all be healthier doing so.

The Ready State

[Season 3, Episode 6 – Sedentary Lifestyles](#), Guest

Talking about activity permissive offices and schools with StandupKids.org founders, Kelly and Juliet Starrett

Video

TAMU Foundation

[Mark Benden – Taking a Stand](#)

KBTX

[Texas A&M Sit-Stand App](#)

KAGS

[Standing Desks Newscast](#)

Brazos Valley Magazine

[Standing Desks – Then and Now](#)

BVM1:

[Interview with Dr. Mark Benden](#)

School of Rural Public Health:

[Dr. Mark Benden – Standing Desk](#)

KRHD:

KRHD Newscast – Standing Desk

Texas A&M School of Public Health:
Computer Use Ergonomics

Stand2Learn, Inc.:
Pros and Cons of School Desk Ergonomics

Media coverage

ABC
Amazon News
Arstechnica
Austin American Statesman
BBC
BioSpace
Bloomberg
Business Standard
Care 2
CBS
Chicago Tribune
CNN
Dallas Morning News
DieWelt
EdNews Daily
EurekAlert!
Examiner
Fast Company
Forbes
Fox News Health
Futurity
Good Housekeeping
GQ
Healio
Houston Chronicle
HSC/TAMU Podcast
Huffington Post
IIES Magazines
Inc Magazine
KAGS
KBTX
LA Times
Martha Stewart Living
Men's Health

MMQB
Mobility WOD Podcast
MSN
NBS
New York Times
NewsMax
Newswise
NPR
Outside
Parade Magazine
Parents Magazine
Reuters
Science Daily
Seattle Times
State Times India
TagesAnzeiger
Teacher Magazine
TechTimes
Texas Standard
Texas Tribune
The Eagle
The Express Tribune
The Medical News
The New Indian Express
The Siasat Daily
Shape Magazine
Time Magazine
Today Parenting
Waco Tribune Herald
Wall Street Journal
Washington Post
Women's Health
Yahoo News