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### Interprofessional Education Through Home Modification

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# Interprofessional Education Through Home Modification

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*Physical Therapy*

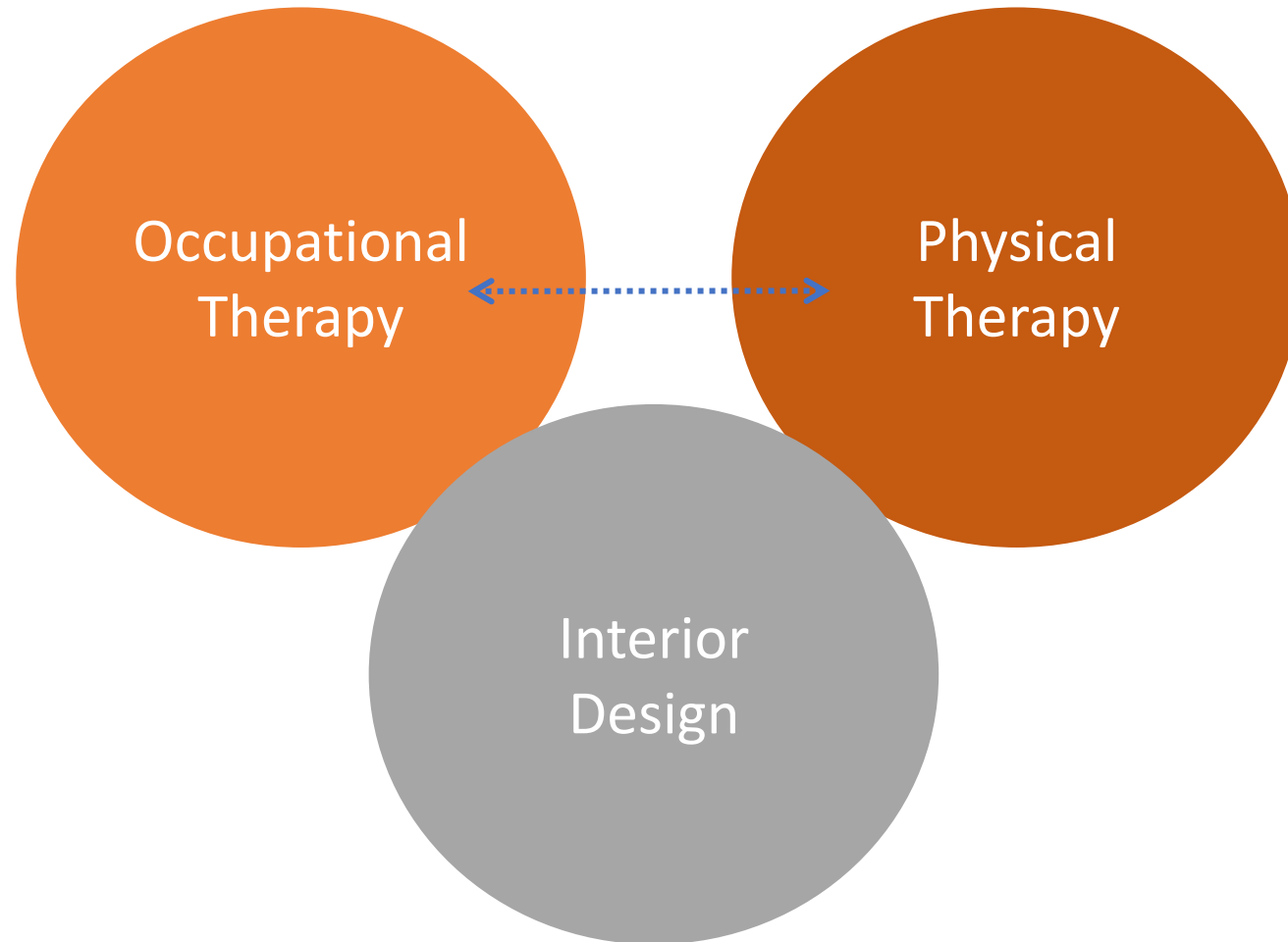
*Occupational Therapy*

*Interior Design*



# Team Dynamic: building the *Dream Team*

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# Occupational Therapy Vision Statement

As an inclusive profession, occupational therapy maximizes health, well-being, and quality of life for all people, populations, and communities through effective solutions that facilitate participation in everyday living. Occupational therapy is evidence based, client centered, and cost-effective.



# OT role in Environmental Modification

Understanding of physical function/mobility and cognitive differentiation.

Assessment of roles and responsibilities of the client.

Collaboration with client and caregiver to determine mobility needs or modifications needed for improved cognitive function in the home or work environment.

Assess movement in the environment.

Make recommendations for modifications to the environment or equipment.

# Vision Statement for the Physical Therapy Profession

Transforming society by optimizing movement to improve the human experience.

<https://www.apta.org/apta-and-you/leadership-and-governance/vision-mission-and-strategic-plan>



# PT role in Environmental Modification

Assessment of physical function and mobility.

Assessment of roles and responsibilities of the client.

Collaboration with client and caregiver to determine mobility needs in the home or work environment.

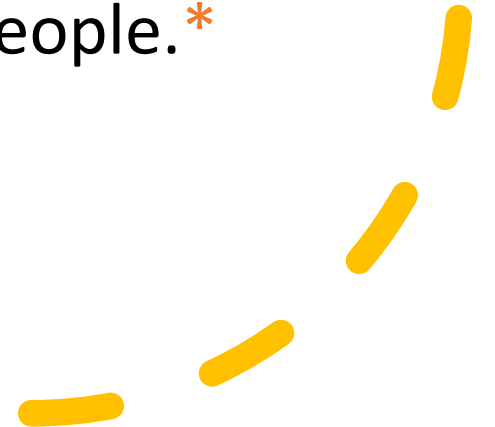
Assess movement in the environment.

Make recommendations for modifications to the environment or equipment.

# Interior Design Professional Definition

Qualified by means of education, experience, and examination, interior designers have a moral and ethical responsibility to protect consumers and occupants through the design of code-compliant, accessible, and inclusive interior environments that address well-being, while considering the complex physical, mental, and emotional needs of people.\*

\*Abbreviated definition retrieved from CIDQ  
at <https://www.cidq.org/about-cidq>





# ID role in Environmental Modification

Assessment of "User(s)" needs, abilities, and limitations.

Assessment of existing space and identification of primary spatial issues.

Knowledge and application of codes and regulation requirements.

Collaboration with OT and PT to accommodate current and future needs

Design space and specify furniture/equipment for modification.

# Interprofessional Education



Interprofessional education occurs when students from two or more professions learn about, from, and with each other to enable effective collaboration and improve health outcomes. (WHO Report, 2010)

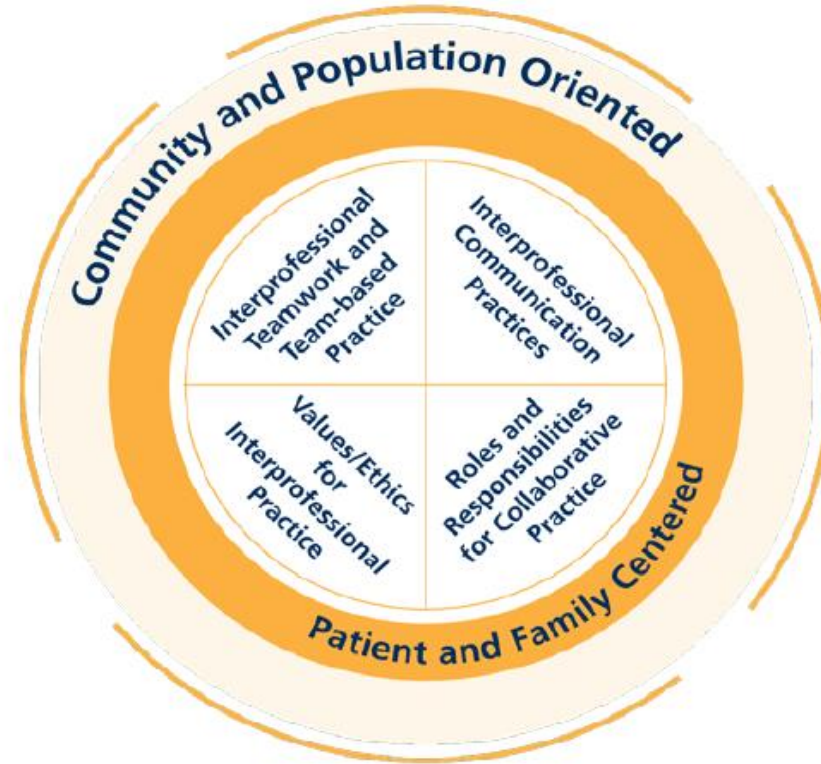


Interprofessional education (IPE) is a prerequisite to building a collaborative practice environment and optimizing patient care.



A single disciplinary approach to patient care is costly, unsafe, and ineffective and thus the creation of interprofessional teams of healthcare providers is essential to manage complex and chronic patient care needs (Institute of Medicine, 2003).

## Interprofessional Collaboration Competency Domain



  
The Learning Continuum pre-licensure through practice trajectory

# Experiential Learning in Higher Ed

- "emphasis on developing *real-world skills* through hands-on and applied learning..." [better prepares students for the work world and demonstrates return-on-investment for expensive degree programs]
- "can be an exemplar of institutional missions [for serving the community]"
- "...have significant impact on students' overall success in school."

Roberts, J. (2018). From the Editor: The Possibilities and Limitations of Experiential Learning Research in Higher Education. *Journal of Experiential Education*, 41(1), 3–7. <https://doi.org/10.1177/1053825917751457>







**Task:** Be able to complete a gardening task that includes carrying pots and potting plants.

**Objectives:**

1. Understand visual impairments associated with macular degeneration
2. Understand potential challenges for someone with macular degeneration while participating in daily tasks
3. List at least 2 potential home modifications to increase safety and independence within the home for someone with macular degeneration

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## Disability Simulation

Elaine is a 76-year-old female with macular degeneration, a condition affecting the retina. She has difficulty with central vision and depth perception. She currently lives with her spouse of 50 years in a double-wide trailer. Her spouse is in good health and is active in the community. They have 2 steps to enter her trailer in the front and 1 step to exit onto the deck at the back. None of the steps have handrails. She enjoys being outside and gardening. Unfortunately, she has not been as active since she almost fell down the step attempting to go onto the deck and no longer feels this is something she can try without her husband holding onto her. She also reports bumping into furniture and sometimes walls. Daily tasks like going to the bathroom or taking a shower make her nervous since locating the toilet or determining when to step over the side of the tub is challenging. She would love to feel safer within her trailer and be able to decrease her dependence on her spouse.

# Effects of Age-Related Macular Degeneration

- Central vision with high clarity is lost first
- Depth perception may be impaired





**Task:** access refrigerator to gather items; complete 1 self care ADL task at the bathroom vanity (wash hands)

**Objectives:**

- Understand Duchenne's Muscular Dystrophy and the symptoms/effects that affect daily functioning in the home
- Understand home design that allows for accessibility of different size wheelchairs and growing/aging children
- List at least 3 home modifications to increase accessibility

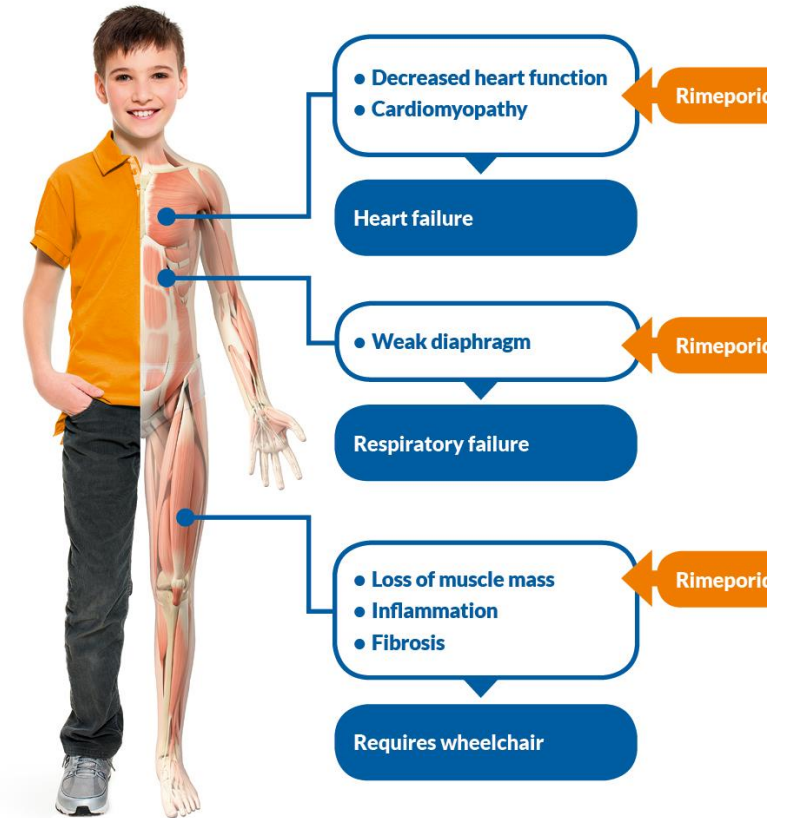
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## Disability Simulation

Donovan is a 10-year-old diagnosed with Duchenne Muscular Dystrophy. He lives with his mom who works from home and his older brother who is a senior in high school. Their home is single level with one step to enter, which his mom usually helps lift his wheelchair over. He has been having difficulty using his manual wheelchair lately due to muscle weakness/atrophy and is looking to transition into a power chair. The house is carpeted with the exception of the kitchen and bathroom. They have a tub/shower combo with a shower bench in Donovan's bathroom. Donovan would like to do more of his morning ADL routine independently, but he has a hard time reaching over the vanity for the sink while in his wheelchair. Donovan enjoys preparing meals for himself and helping his family cook, but he is currently unable to access the refrigerator or oven/microwave due to the narrow space between the kitchen counter and island. The family recently got a puppy that Donovan would like to play backyard fetch with, but there are 5 steps at the backdoor to access the yard and the doorway is narrow. Donovan's mother is hoping to make some modifications to the home to enable Donovan to have more independence and reduce her caregiver burden.

# Duchenne's Muscular Dystrophy Symptoms/Progression:

- + Gower's Sign
- Difficulty learning to walk
- LE flexion contractures after beginning permanent wheelchair use
- Calf pseudohypertrophy (large, weak calves)
- Leg pain
- Lumbar lordosis/protruding abdomen
- Toe walking due to shortened calf muscles
- Scoliosis
- Respiratory infections—chest muscle weakness, contractures
- Frequent falls



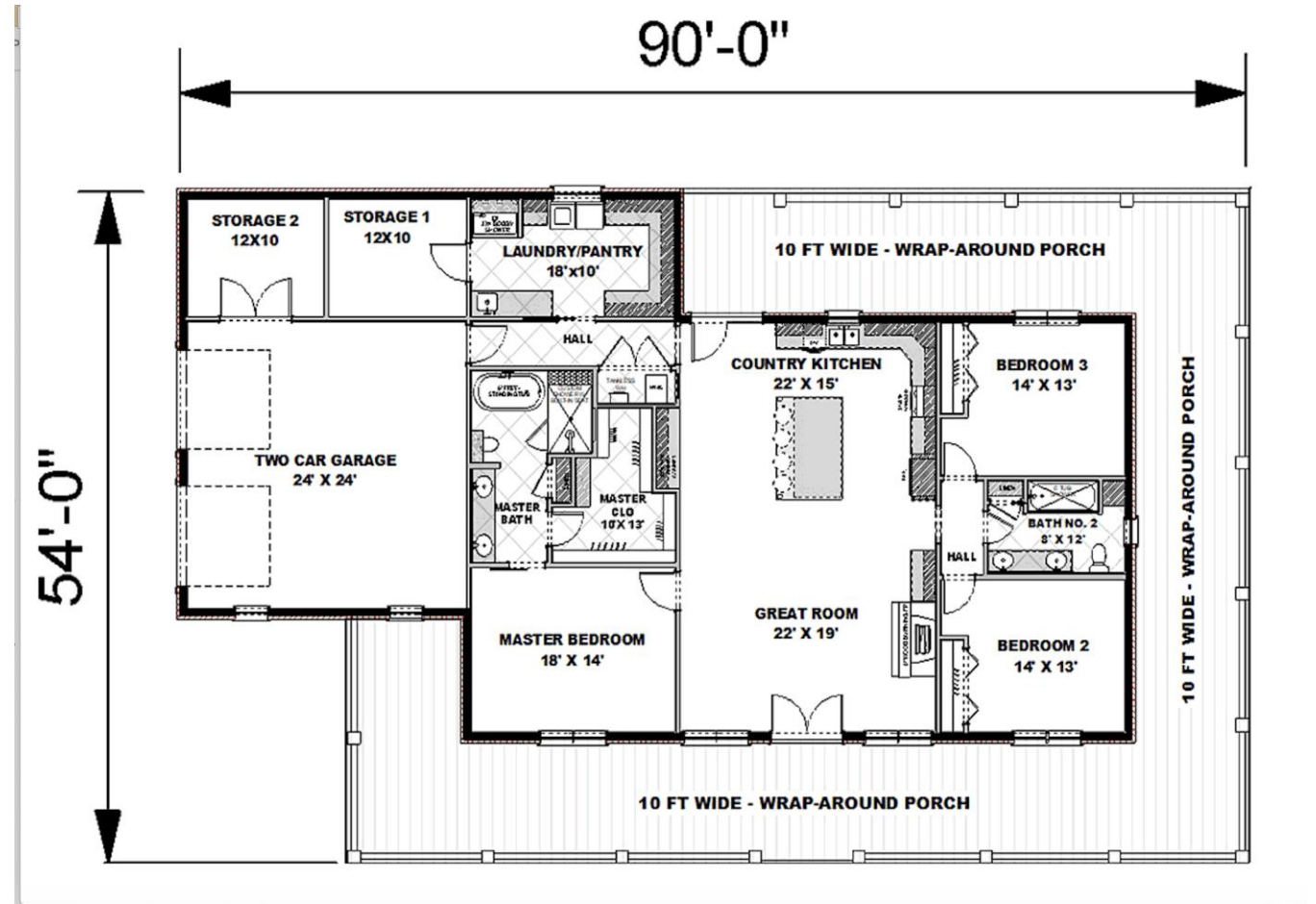


# Student Examples

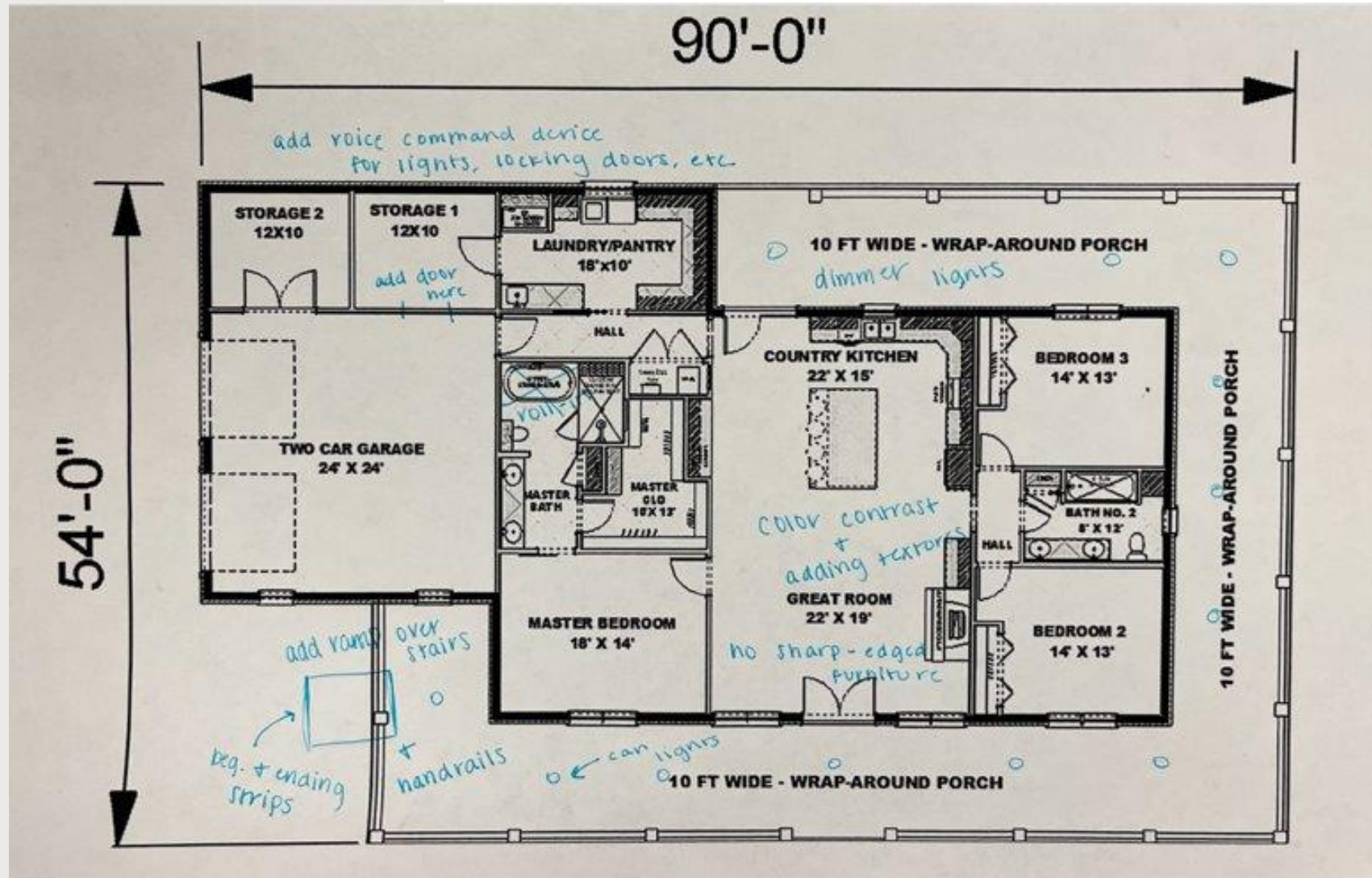
## Recommended Modifications:

- Handrails: bathroom & stairs
- Ramp outside:
  - Pulling sled with heavy objects
  - If she ends up needing walker
- Color contrasts:
  - Different containers for seeds
  - Navigating furniture
  - Flooring (rugs)
- Shower:
  - Rolling shower system (bench slides in)
  - Walk-in tub
- Lighting:
  - Outside
  - Dimmer switches inside
- Textures:
  - Strips for elevated surfaces
  - Mats in shower and tub
  - Pillows/decor
- Technology: Alexa, Life Alert

Elaine (Macular Degeneration) Existing Floor Plan



# Student Examples



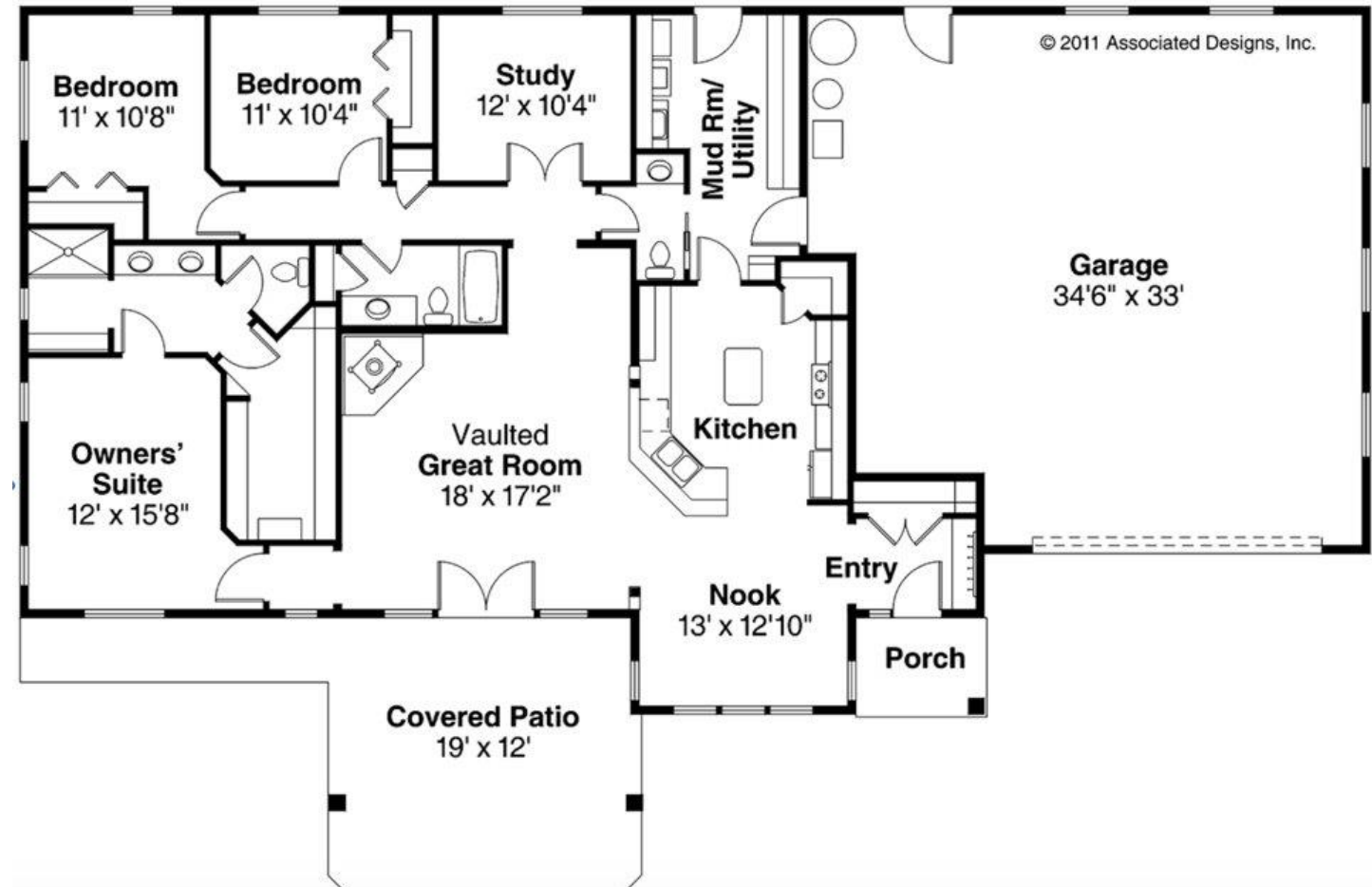
Elaine (Macular Degeneration) Working Floor Plan

# Student Examples

## Recommended Modifications:

- Remove carpet:
  - replace with vinyl flooring (slip resistant)
- Kitchen: remove island
  - peninsula shorter
  - slide out countertops for him to cook (split level workspace)
- Ramp for entry to front
- Vertical platform lift to give access to backyard
- Remove fireplace
  - expand bathroom
- Motion sensor for sink faucets
- Sinks with open area underneath (insulated to prevent burns)
- Infinity shower
- Smart home:
  - phone app to control floor lights, thermostat, TV

Donovan (Duchenne's) Existing Floor Plan

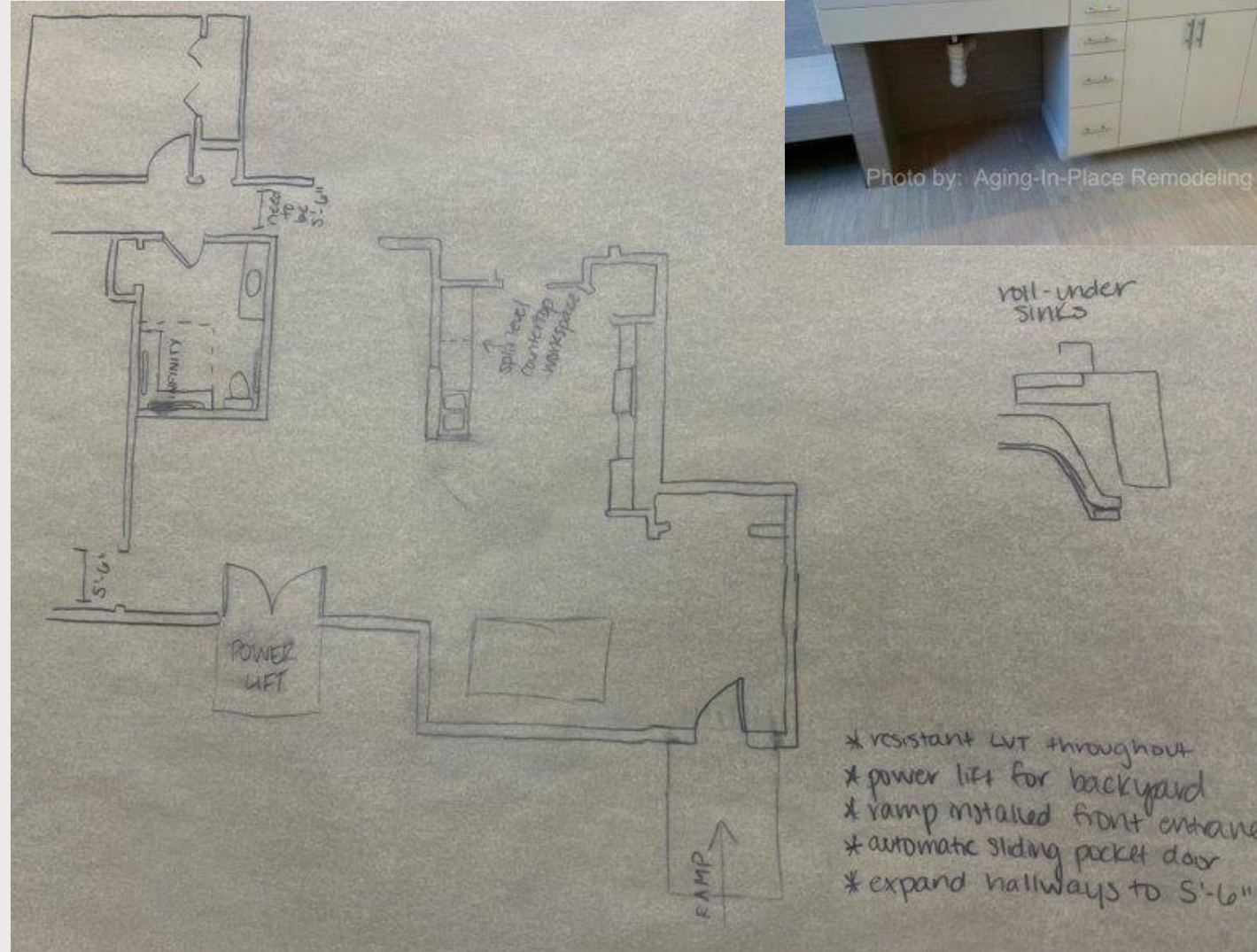




# Student Examples



Photo by: Aging-In-Place Remodeling



Donovan (Duchenne's) Working Floor Plan





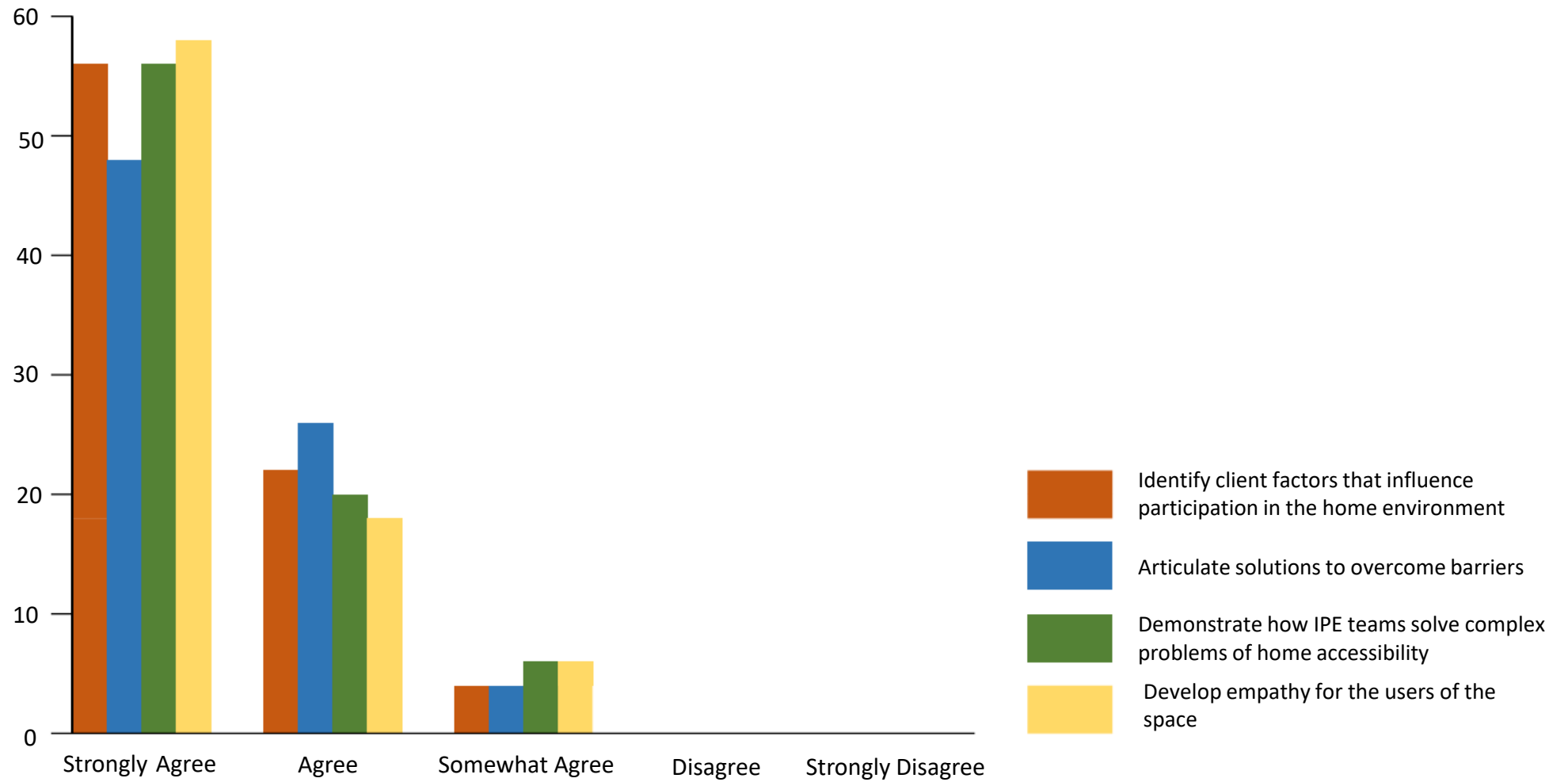
# IPE Events: Spring 2022, 2023



IPE Event Day  
2023



# Outcomes



# Student Comments



Interior design had great insight on feasibility and livability of home modifications that we as PT & OT students failed to consider.

Going into this event, I had no knowledge of interior design, at all. Leaving this event, I've learned several new technical terms regarding the interior design of a home. And gained knowledge on how to read a floor plan!

I did not know there was an entire specialty of interior designer that made things adaptive.

I learned that there is specific interior design disciplines for home modifications for patients.

How movements are affected with disorders and how to accommodate that when designing

I learned a lot about the role of interior designers in designing safe and functional spaces for those disabled. It was cool seeing the different measurements and options for things such as lighting and doorways

I did not realize that interior design majors learned about such functional changes within a home! I definitely just thought of HGTV.

OT&PT know a lot more about home solutions and ADA designations and dimensions than I expected.





# Acknowledgements

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- Teresa Plummer
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School of Physical Therapy

- Renee Brown

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