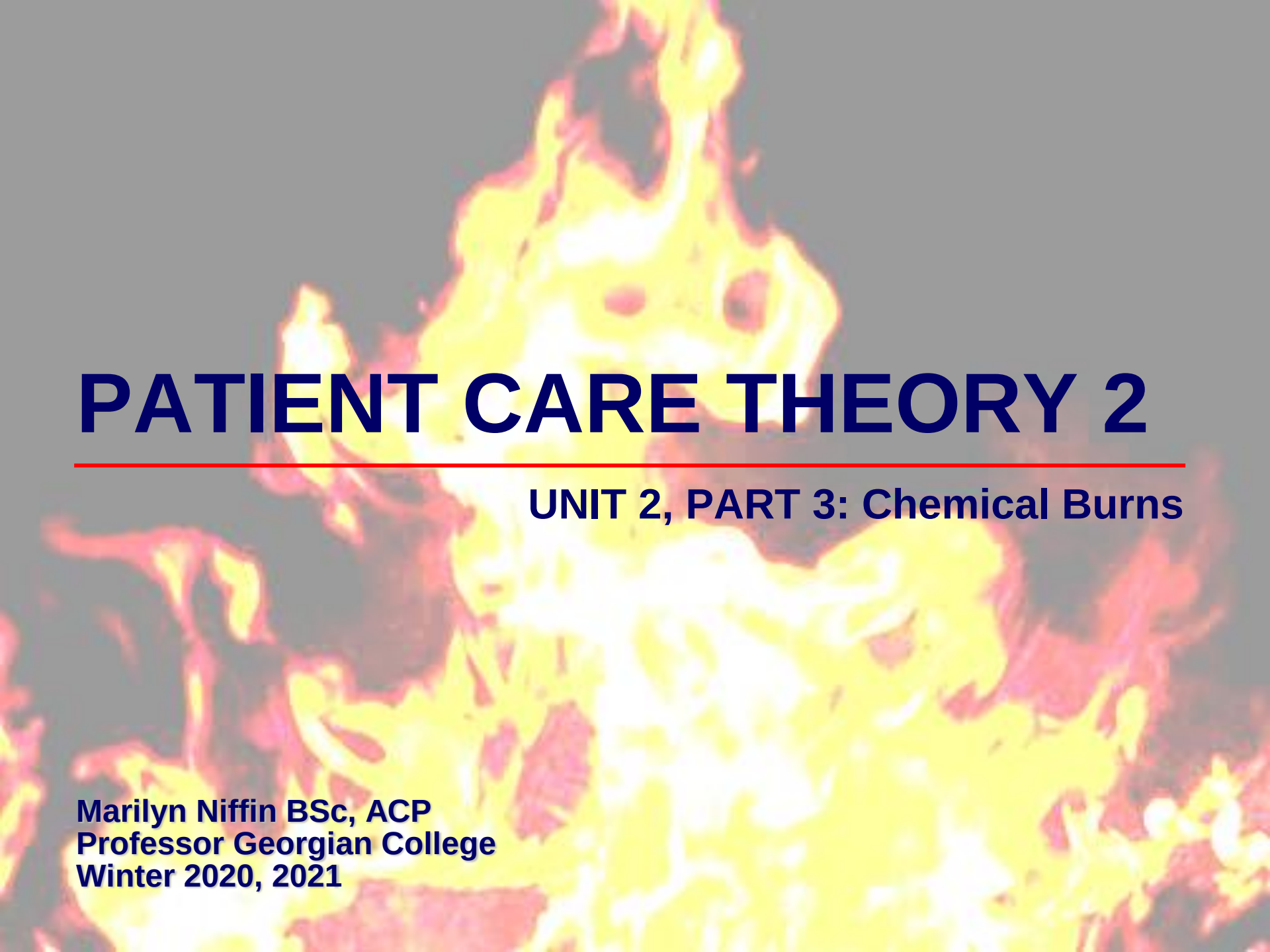

# PATIENT CARE THEORY 2

## UNIT 2, PART 3: Chemical Burns

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# Chemical Burns

- Personal safety comes first!
- Ensure the fire department is responding if needed
- Firefighters are the experts in decontamination
- If responding to an industrial site, workplace hazardous material information system, or WHMIS information should be readily available
- Company employees/managers should have a material safety data sheet (MSDS) from WHMIS for you describing the chemical involved

# Chemical Burns

THE **SOLUTION**
FOR **POLLUTION**
IS **DILUTION**

# Chemical Burns Management

- Scene Size-up
  - HazMat team?
  - Establish hot, warm and cold zones (prn)
  - Prevent further personnel from exposure

# Chemical Burns – treatment

- BSI precautions (PPE)
- Remove and bag all clothing
- Remove any jewelry rings etc.
- Brush off any dry chemical (carefully)

# Chemical Burns

- Don’t waste time searching for neutralizing agents
- Dry powders: dusted off very carefully prior to irrigation
- virtually all other chemicals can be irrigated with NaCl or sterile water for ≥ 20 minutes – cover with dry dressings (acid min 10 minutes, alkali min 20 minutes)

***Exception: hydrofluoric acid*** *(used in glass etching, metal cleaning, electronics manufacturing, home rust remover)*

- ***Tx*** *with topical* ***calcium gluconate*** *gel or injection of calcium gluconate directly into the site.*

***The calcium binds with the flouride ion to reduce the pain.***

# EXAMPLES OF WATER REACTIVE CHEMICALS (Refer to Hazmat resources)

- Alkali metals, such as Na, Li, K
- Alkali metal hydrides, such as LiH, $CaH_2$, $LiAlH_4$, $NaBH_4$, alkali metal amides, such as $NaNH_2$
- Metal alkyls, such as lithium and aluminum alkyls
- Grignard reagents, RMgX
- Halides of nonmetals
- Phosphorus pentoxide
- Calcium carbide •
- Organic acid halides and anhydrides of low molecular weight, such as, acetyl chloride acetic acid anhydride

# Chemical Burns

- Be aware of irrigation run off – hazardous?
  - Attempt to contain rinse water
- Follow direction from Fire Department HazMat
  - (if they have specific decontamination recommendations)

# Chemical Burns – Riot control Agents

- Agents
  - Chloroacetophenone (CN or Mace) chlorobenzylidenemalononitrile (CS), Oleoresin, Capsicum (OC, pepper spray)
  - Irritation of the eyes, mucous membranes and respiratory tract
  - No permanent damage
- General S&S
  - Coughing, gagging, vomiting, eye pain and tearing, temporary blindness
- Management
  - Irrigate eyes with normal saline

# *Burns - Chemical*

Eye irrigation

# Eye Irrigation

- attempt to utilize eye wash station/equipment if available at scene,
- advise patient not to rub eye(s),
- position the patient with his/her affected side down if one eye is affected or supine if both eyes are affected
- manually open eyelids if required, and
- attempt to irrigate away from tear duct(s);

# *Eye Irrigation*

Take a 1 litre bag of NaCL

Connect it to IV macro-drop tubing & purge with fluid

Connect the IV tubing to a set of nasal prongs

Note: you may need secure the connection with tape

# *Eye Irrigation*

- Straddle the prongs over the bridge of the nose
- Open the patient's eyes
- Remove any contact lenses
- Begin infusing fluids through the prongs: medial to lateral
- Secure the prongs - irrigate for ≥ 10 - 20 min. (depending on chemical)
- notify the receiving facility of the hazardous material exposure and associated decontamination efforts

# Eye Burns

- Cover eye(s) with moist dressing
- transport

# Questions?