Competency Based Education For Pain Relief

Scott M. Fishman, MD
Professor
Chief, Division of Pain Medicine
Executive Vice Chair, Dept. of Anesthesiology
Director, Center for Advancing Pain Relief
University of California, Davis School of Medicine
The Problem of Pain in America

• Disturbing discrepancy
  • Pain is widespread
  • Huge toll in suffering, disability, $’s
  • Treatment often delayed, disorganized, inaccessible, or ineffective

• The diffusion of knowledge about pain is inadequate

“Given that the twin dangers of pain undertreatment and the abuse of pain-active medications are among our society’s deepest public health concerns, pain medicine does not receive the attention that it deserves in medical education.”
Only 1/3 Faculties could identify designated pain content hours in health sciences.

Focus of pain content least for pain assessment, misbeliefs and monitoring.

Veterinary Medicine had 3X more designated pain content hours on average, & 5x medicine

Watt-Watson, McGillian et al., Pain Res Manage 2009 14(6), 439-444
Slide Courtesy of Dr. Judy Watt-Watson
“There are strong indications that pain receives insufficient attention in virtually all phases of medical education”
Consensus Building
Interprofessional Summit

• 2-day summit in August 2012

• 30 professionals from different major clinical professions
  • Dentistry, medicine, nursing, pharmacy, physical therapy, psychology, social work, alternative and complementary medicine, & veterinary medicine
  • IP Expertise in pain management, education science, curriculum development, consensus building, and knowledge uptake
Executive Committee

- **Project Directors:**
  - Scott Fishman, MD
  - Heather Young, PhD, RN, FAAN

- Ellyn Arwood, EdD; University of Portland
- Dan Carr, MD, Tufts University
- Roger Chou, MD; Oregon Health & Science Univ.
- Debra Gordon, DNP, University of Washington
- Keela Herr, PhD, RN, AGSF, FAAN; Univ. of Iowa
- Beth Murinson, MD, PhD; Johns Hopkins Univ.
- Judy Watt-Watson, RN, MsC, PhD; Univ of Toronto
CAC Members

Debra Bakerjian, PhD, RN, FNP; UC Davis Health System

Jane C. Ballantyne, MD, FRCA; UW Medicine Center for Pain Relief at University of Washington

Daniel B. Carr, MD, FABPM; Tufts University School of Medicine

Molly Courtenay, PhD, MSc, BSc: Cert. Ed; RN; University of Surrey

Maja Djukic, PhD, RN; New York University

Steven Given, DAOM, LAc; American College of Traditional Chinese Medicine

Debra B. Gordon, RN-BC, DNP, ACNS-BC, FAAN; University of Washington,

Steven B. Graff-Radford, DDS; Cedars-Sinai Medical Center

Robin Kennedy, PhD, MSW; Cal. State University Sacramento
CAC Members

Ian Koebner, MSc, LAc; UC Davis School of Medicine
Nancy E. Lane, MD; UC Davis School of Medicine
Judith A. Paice, PhD, RN, FAAN; Northwestern University
Ravi Prasad, PhD; Stanford University School of Medicine
Bruno Pypendop, DrMedVet, DrVetSci, Dipl. ACVA: UC Davis School of Veterinary Medicine
Joanna Rowe Kaakinen, PhD, RN; Linfield College
Todd Semla, MS, PharmD, BCPS, FCCP, AGSF; Northwestern University
Naileshni Singh, MD; UC Davis School of Medicine
Kathleen Sluka, PT, PhD; Univ. of Iowa
Barbara St. Marie, PhD, RN, ANP, GNP; University of Minnesota Medical Center
Core Values and Principles

- Advocacy
- Collaboration
- Communication
- Compassion
- Comprehensive Care
- Cultural Inclusiveness
- Empathy
- Ethical Treatment
- Evidence-based Practice
- Health Disparities Reduction
- Interprofessional Teamwork
- Patient-Centered Care
Pain Management Core Competencies

Core Values and Principles:
- Advocacy
- Empathy
- Collaboration
- Ethical Treatment
- Comprehensive Evidence-Based Practice
- Compassion
- Health Disparities Reduction
- Comprehensive Care

What is pain?

How is pain recognized?

How does context influence pain management?

How is pain relieved?

Meeting the needs of the person in pain
Domains

- Linked with the IASP Curricula [Updated May 2012]

“During the past 3 years, a dedicated group of IASP members have spent time revising all of the uniprofessional curricula. This effort, led by Dr. Judy Watt-Watson, resulted in revised curricula for Dentistry, Medical Schools, Nursing, Occupational Therapy, Physical Therapy, Pharmacy, and Psychology.”

- Common Template
Domains
Adopted from IASP Curricula

**DOMAIN 1**
- Multidimensional Nature of Pain: What is pain?

**DOMAIN 2**
- Pain Assessment and Measurement: How is pain recognized?

**DOMAIN 3**
- Management of Pain: How is pain relieved?

**DOMAIN 4**
- Clinical Conditions: How does context influence pain management?
Domain 1
Multidimensional Nature of Pain: What is pain?

1. Explain the complex, multidimensional and individual-specific nature of pain
2. Present theories and science for understanding pain
3. Define terminology for describing pain and associated conditions
4. Describe the impact of pain on society
5. Explain how cultural, institutional, societal and regulatory influences affect assessment and management of pain
1. Use valid and reliable tools for measuring pain and associated symptoms to assess and reassess related outcomes as appropriate for the clinical context and population

2. Describe patient, provider, and system factors that can facilitate or interfere with effective pain assessment and management

3. Assess patient preferences and values to determine pain-related goals and priorities

4. Demonstrate empathic and compassionate communication during pain assessment
Domain 3

Management of Pain: How is pain relieved?

1. Demonstrate the inclusion of patient and others, as appropriate, in the education and shared decision-making process for pain care

2. Identify pain treatment options that can be accessed in a comprehensive pain management plan

3. Explain how health promotion and self-management strategies are important to the management of pain

4. Develop a pain treatment plan based on benefits and risks of available treatments [# 5-7 next slide]
Domain 3

Management of Pain: How is pain relieved?

5. Monitor effects of pain management approaches to adjust the plan of care as needed

6. Differentiate physical dependence, substance use disorder, misuse, tolerance, addiction, and non-adherence

7. Develop a treatment plan that takes into account the differences between acute pain, acute-on-chronic pain, chronic/persistent pain, and pain at the end of life
Domain 4
Clinical Conditions:
How does context influence pain management?

1. Describe the unique pain assessment and management needs of special populations
1. Explain how to assess and manage pain across settings and transitions of care
1. Describe the role, scope of practice and contribution of the different professions within a pain management care team [# 4-5 next slide]
Domain 4
Clinical Conditions:
How does context influence pain management?

4. Implement an individualized pain management plan that integrates the perspectives of patients, their social support systems and health care providers in the context of available resources

4. Describe the role of the clinician as an advocate in assisting patients to meet treatment goals
Dissemination

• **Promote awareness and change**
  • Open access website
  • Publish in Journals
    • Anchoring report
    • Publications in journals within each professions journals and literature
  • Present at professional conferences
  • Endorsement from professional and education organizations
  • Implementation
  • **Revise and Improve**


ENDORSEMENTS

American Academy of Pain Medicine, American Pain Society, Commission on Collegiate Nursing Education, Council on Social Work Education, International Association for the Study of Pain, National Association of Social Workers, American Council of Academic Physical Therapy

SUPPORT

American Association of Medical Colleges, American Psychological Association, American Nursing Association, others
Dissemination

• Promote awareness and change
  • Implementation
  • Accreditation and Clinician Certification
UC Davis ECHO®
Pain Management

- Peer-to-peer Tele-Mentoring program
- Core-competencies in pain management as foundation for CME
- Fosters primary care centers of excellence in pain management
- Ongoing partnership with Medicaid health plans
  - Recruitment of clinical sites
  - Design sustainability plan
UC Davis ECHO®
Pain Management

- Multidisciplinary team representing >7 health professions
- Approximately 18 primary care sites
- Videoconference sessions held weekly
  - 75 minutes
  - Didactic presentations and case discussions
- Funded through a two-year grant from the California HealthCare Foundation
UC Davis ECHO®
Pain Management
UC Davis ECHO®
Pain Management

- February 4, 2014 – December 30, 2014,
  - 200 unique attendees from 22 clinics took part in the learning sessions
  - 445 completed post-session evaluation surveys (31.92%)
  - 96.6% of participants reported increased competence as a result of participation
  - 98.2% reported that the experience helped them care for their patients with pain
## Attitudes to Providing Care to Individuals with Chronic Pain

**N = 21**

<table>
<thead>
<tr>
<th>Statement</th>
<th>Baseline</th>
<th>6-month follow-up</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working with patients with chronic pain is satisfying</td>
<td>2.92</td>
<td>3.67</td>
<td>0.74</td>
</tr>
<tr>
<td>There is little I can do to help patients with chronic pain</td>
<td>2.48</td>
<td>1.90</td>
<td>-0.58</td>
</tr>
<tr>
<td>Patients with chronic pain irritate me</td>
<td>3.15</td>
<td>2.70</td>
<td>-0.45</td>
</tr>
<tr>
<td>Patients with chronic pain are particularly difficult for me to work with</td>
<td>3.28</td>
<td>3.43</td>
<td>0.15</td>
</tr>
<tr>
<td>I can usually find something that helps patients like this feel better</td>
<td>3.42</td>
<td>4.10</td>
<td>0.67</td>
</tr>
<tr>
<td>I prefer not to work with patients with chronic pain</td>
<td>3.19</td>
<td>2.57</td>
<td>-0.62</td>
</tr>
</tbody>
</table>
### Perceived Competence in Providing Chronic Pain Care

**N = 21**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Baseline</th>
<th>6-month follow-up</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop a treatment plan that takes into account the differences between acute pain, acute-on-chronic pain, chronic/persistent pain, and pain at the end of life.</td>
<td>57.35</td>
<td>71.79</td>
<td>14.44</td>
</tr>
<tr>
<td>Differentiate physical dependence, substance use disorder, misuse, tolerance, addiction, and non-adherence.</td>
<td>51.30</td>
<td>64.79</td>
<td>13.49</td>
</tr>
<tr>
<td>Describe the unique pain assessment and management needs of special populations.</td>
<td>48.23</td>
<td>61.11</td>
<td>12.88</td>
</tr>
<tr>
<td>Present theories and science for understanding pain.</td>
<td>45.86</td>
<td>58.61</td>
<td>12.75</td>
</tr>
<tr>
<td>Explain how health promotion and self-management strategies are important to the management of pain.</td>
<td>62.70</td>
<td>75.26</td>
<td>12.57</td>
</tr>
<tr>
<td>Use valid and reliable tools for measuring pain and associated symptoms.</td>
<td>55.33</td>
<td>66.26</td>
<td>10.93</td>
</tr>
<tr>
<td>Develop a treatment plan that takes into account the differences between acute pain, acute-on-chronic pain, chronic/persistent pain, and pain at the end of life.</td>
<td>57.35</td>
<td>71.79</td>
<td>14.44</td>
</tr>
</tbody>
</table>
UC Davis ECHO®
Pain Management

- Full evaluation underway
  - Access to Care
  - Changes in knowledge, attitudes and behaviors
  - Resource utilization
  - Quality and safety
Pain Competency Based Interprofessional Simulated Learning Modules

- Develop and test a Pain Competency Based Simulated interprofessional training experience for students of prelicensure health professional schools

- Funded through a 2-year grant from the Josiah Macy, Jr. Foundation
Pain Competency Based Interprofessional Simulated Learning Modules

• Pain competencies selected through a consensus summit

• Learning strategies and clinical scenarios developed through a 2\textsuperscript{nd} consensus summit
Funded through a 2-year grant from the Josiah Macy, Jr. Foundation, the primary purpose of this project is to collaboratively develop and test a specialized interprofessional training experience for students of prelicensure health professional schools with a focus on the practice of relieving pain.

Pain Competency Based Interprofessional Simulated Learning Modules

- Summits attended by diverse IP experts
  - Education science, pain medicine, primary care, pharmacy, social work, psychology, as well as resident physicians, and nursing and medical students.
- Simulated educational modules are under development
  - Incorporate 6 pain competencies and 6 interprofessional practice competencies
AAMC Competencies for General Medicine

• Across the 58 competences, “pain” is not mentioned once

• AAMC competencies are broad
  • 16 of the 21 pain competencies are, at least to some extent, covered by one or more of the AAMC competencies
  • Pain-related concepts could be readily incorporated into two key AAMC competencies

Essentials of Baccalaureate Education for Professional Nursing Practice (2008)

- Nine “Essentials”
  - Delineate the outcomes expected of graduates of baccalaureate nursing programs.
  - Pain is not mentioned once
  - (although mentioned briefly as possible “sample content” pg. 32)
• ALL 21 Pain Competencies are, at least to some extent, covered by one or more of the 9 BEPNP Essentials

• Pain-related concepts could be readily incorporated into many of the BEPNP essentials
USMLE Review for Pain Core Competencies

Review Articles
Core Competencies for Pain Management: Results of an Interprofessional Consensus Summit

Scott M. Fishman, MD,* Heather M. Young, PhD, RN, FAAN,* Elyn Lucas Anwood, PhD, CCC-SLP,* Roger Chou, MD,* Keela Herr, PhD, RN, AGSF, FAAN,* Beth D. Martinson, MS, MD, PhD,*† Andy Webb-Watson, RN, MSc, PhD,* Daniel B. Carr, MD, FABPM, FFPMANZCA (Hon.)*

*Department of Anesthesiology & Pain Medicine, University of Washington, Seattle, Washington;
†College of Nursing, New York University, New York, New York.

USMLE® United States Medical Licensing Examination®
The Interprofessional Pain Management Competency Program (IPMCP) sent reviewers to NBME headquarters for a secure review of USMLE content related to pain and pain management.

- Passing this examination is required for licensure of every US allopathic physician.
• November 2014
• A blue ribbon panel of 12 internationally recognized experts in pain a review of the USMLE exam for inclusion of pain competencies
• Secure Review in Philadelphia
USMLE Pain Review

• Dan Carr, MD (AAPM President-elect Member, Professor-Tufts)
• Martin Cheatle, PhD (Pain Psychologist, Penn)
• Scott Fishman, MD (AAPM Past President, Professor-UC Davis)
• Rollin Gallagher, MD (AAPM Past President, National Director for Pain Management VAHS, Professor-Penn)
• Joanna Katzman, MD (Director of Pain Medicine and Pain ECHO, Professor, University of New Mexico)
• Beth Murinson, MD, PhD (AAPM BOD – Professor-John Hopkins)
• Sean Mackey, MD, PhD (AAPM President & Chief of Pain Medicine, Professor-Stanford)

• Rosemary Palomano, PhD, RN (University of Pennsylvania School of Nursing)
• Adrian Popescu, MD (Deputy Director for the National Pain Management VA Health System)
• Jim Rathmell, MD (ASA BOD and Pain Committee, Chief of Pain Medicine, Professor-Harvard/MGH)
• Rick Rosenquist, MD (ASA Pain Committee Chair, Past President of ASRA, Professor, Cleveland Clinic)
• David Tauben, MD (Chief, Pain Medicine, Professor, Univ. of Washington)
Prior to the evaluation, we found that there had been previous USMLE evaluations but none with reproduced or reproducible methods.

The panel developed a data collection protocol to collect up to ten data points on each question:
- including incorporation of questions related to the pain management core competencies.

6 teams of two reviewers assessed subsets of questions from each of the three exam steps:
- Steps 1, 2, and 3.
<table>
<thead>
<tr>
<th>Question Number</th>
<th>Includes Pain (1 = yes or 0 = no)</th>
<th>How Closely Related to Pain</th>
<th>Quality</th>
<th>Domain Number</th>
<th>Competency (numbers)</th>
<th>Major Topics in Pain</th>
<th>Other Major Topics (e.g. craniofacial pain, headache, transitions acute to chronic)</th>
<th>Key Public Health Issues</th>
<th>Testing Strategy</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>example 1.1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Question Number</td>
<td>Includes Pain (1 = yes or 0 = no)</td>
<td>How Closely Related to Pain</td>
<td>Quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------------------</td>
<td>----------------------------</td>
<td>---------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 = Fully related to pain or its management</td>
<td>1 = Acceptable Quality;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 = Partially related to pain or its management</td>
<td>2 = Question and/or answer no longer relevant (outdated evidence, standard of practice);</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 = Not related to pain but includes pain-related terms or content</td>
<td>3 = The question and/or answer not worded clearly and could be interpreted in multiple ways;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4 = The answer is incorrect</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Domain Number</th>
<th>Competency (numbers)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.4 (i.e., domain 1, comp 4), 2.2 (i.e., domain 2, comp 2)</td>
</tr>
<tr>
<td>Competency (numbers)</td>
<td>Major Topics in Pain</td>
</tr>
<tr>
<td>---------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>1.4. (i.e., domain 1, comp 4), 2.2 (i.e., domain 2, comp 2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Major Topics in Pain

<table>
<thead>
<tr>
<th>1. Human and social costs of pain</th>
<th>7. Chronic pain, including types and forms of pain</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Pain incidence and causes</td>
<td>A. Nociceptive pain</td>
</tr>
<tr>
<td>B. Worldwide problem of pain</td>
<td>B. Inflammatory pain</td>
</tr>
<tr>
<td>C. Pain, disability and pain economics</td>
<td>C. Neuropathic pain</td>
</tr>
<tr>
<td>D. Gender and age-related pain effects</td>
<td>D. Other pain syndromes: FM, HIV, DM</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Basic science of pain</th>
<th>8. Pediatric pain</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Transduction of nociceptive stimuli</td>
<td>A. Pain in pediatric patients (infants, toddlers, adolescence)</td>
</tr>
<tr>
<td>B. Transmission: 1st and 2nd nociceptor</td>
<td>B. Pre-procedure pain assessment, prevention, and management</td>
</tr>
<tr>
<td>C. Perception: Cortical and subcortical pain representation</td>
<td></td>
</tr>
<tr>
<td>D. Modulation: Inhibition and facilitation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Pain/Symptom focused interview (QRST approach)</td>
<td>A. Pain processing in older adults</td>
</tr>
<tr>
<td>B. Examination of painful limbs/joints</td>
<td>B. Major causes of pain in aging</td>
</tr>
<tr>
<td>C. Examination of spine</td>
<td>C. Adjustments to pain treatments with age</td>
</tr>
<tr>
<td>D. Diagnostic testing and clinical decision making</td>
<td>D. Pain assessment in nonverbal and demented patients</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A. NSAIDS/COX inhibitors</td>
<td>A. Pain assessment in cancer</td>
</tr>
<tr>
<td>B. Opioids</td>
<td>B. Pain management in palliative care</td>
</tr>
<tr>
<td>C. Neuromodulation agents</td>
<td>C. Communication about pain in cancer</td>
</tr>
<tr>
<td>D. Analgesia and placebo</td>
<td>D. Impact of cancer pain on quality of life</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. Nonpharmacological pain management</th>
<th>11. Pain ontology (meaning, culture, ethnicity)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Counseling/shared decision making</td>
<td>A. Interpretation of pain (the meaning of pain)</td>
</tr>
<tr>
<td>B. Conservative pain treatment and evidence-based CAM</td>
<td>B. Pain definitions and taxonomy</td>
</tr>
<tr>
<td>C. Clinical psychology of pain</td>
<td>C. Perspectives on the physician’s duty to relieve pain</td>
</tr>
<tr>
<td>D. Rehabilitation and pain</td>
<td>D. Communicating about culturally defined treatment alternatives</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. Acute pain</th>
<th>12. Interventional approaches to pain care</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Peri-operative pain care</td>
<td>A. Injections</td>
</tr>
<tr>
<td>B. Pain in the setting of trauma and fracture</td>
<td>B. Neurosurgery for pain</td>
</tr>
<tr>
<td>C. Headache</td>
<td>C. Orthopedic interventions</td>
</tr>
<tr>
<td>D. Pain emergencies</td>
<td>D. Stimulator techniques</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Substance abuse</td>
<td>A. Pain contracts, risk assessment and documentation standards</td>
</tr>
<tr>
<td>B.</td>
<td>C. Process of medico-legal complaints</td>
</tr>
<tr>
<td>C.</td>
<td>D. Case law in pain management</td>
</tr>
</tbody>
</table>

| 15. Gynecological and obstetric pain problems | |
|-----------------------------------------------|
Key Public Health Issues

Pain and:

1. Disparities
2. Infants
3. Adolescents
4. Childbirth
5. Older adults
6. End of life
7. Prescription safety, abuse, addiction and misuse
8. Mental illness
9. Chronic Disease Comorbid with Chronic Pain
10. Military-Related Pain
11. Disability
12. Cancer treatment and cancer survival
13. Chronic pain after surgery
14. Patient-reported outcomes
15. Other:
Across all steps

- 432/1506 questions mentioned pain (28%)

- 232/1506 questions were at least partially related to pain
  - 15% of all questions
  - 54% of all questions that mentioned pain
Across all steps

- 94/1506 questions were fully related to pain
  - 6% of all questions
  - 22% of all questions that mentioned pain

- 138/1506 questions were partially related to pain
  - 9% of all questions
  - 32% of all questions that mentioned pain

- 200/1506 questions mentioned pain but were not related to pain
  - 12% of all questions
  - 46% of all questions that mentioned pain
Across all steps

- In 284/1506 questions, pain was limited to a presenting sx within the question (18%).
Professional Education and Training

**Objective:** [Overarching Objective]

- Develop, review, promulgate, and regularly update **core competencies** for pain care education and licensure and certification at the undergraduate and graduate levels
Conclusions

• CBE is here

• Pain Education is not...
  • Inadequate
  • Imperative for changing the state of pain care

• Change
  • Requires a foundation of Expected Competencies
  • Educators appear to be resistant to change unless required to change by their Accreding and Licensing Organizations
“I am all for progress. It’s change I object to.”

-Mark Twain

THANK YOU

smfishman@ucdavis.edu