Office Hours and Contact Information:

**Instructor:** Johnna Swartz  
**E-mail:** jrswartz@ucdavis.edu  
**Office:** 1353 Hart Hall  
**Office Hours:** Wed 12-1 pm or by apt.

**Required Materials:**

No textbook purchase will be required for this course. Required readings for this course will include book chapters, scientific journal articles, and popular press news articles. All of these will be available on Canvas.

**The Course:**

This course will focus on the development of the human stress response and resilience. Some of the topics covered include: How does stress and adversity affect human development at the biological and psychological level? What are the effects of developmental exposure to adversity on physical and mental health? What factors explain why individuals respond differently to the same stressors? What are the biological, psychological, social, and cultural factors that predict resilience to stress and adversity? How can this knowledge be applied towards improving preventions and interventions for individuals experiencing adversity? This course will be taught through a combination of lecture, discussion, and small-group in-class activities and worksheets. Attendance and active participation will be critical components of the course and grading.

**Learning Objectives:**

After taking this course, you should be able to:

- Define stress and resilience and describe different approaches to measuring stress and resilience in research
- Describe the effects of stress on human development across multiple levels (physiology, brain development, psychological development, physical and mental health) and across the lifespan
- Describe factors at multiple levels (biological, psychological, social, contextual, cultural) that increase vulnerability to stress or promote resilience to stress
- Apply research on stress and resilience to develop an intervention for individuals exposed to stress
- Develop skills in writing about scientific research for the general public and writing a grant proposal
Course Expectations and Policies:

- It is very important that you read this syllabus carefully and completely. If anything needs to be clarified, ask questions at the beginning of the quarter. Note deadlines and the date of exams and paper due dates.
- This class will cover interesting but at times potentially upsetting or controversial topics so it is expected that everyone will be respectful in their reactions to the material presented as well as to the diversity of views/opinions expressed. Please contact the instructor at any time with questions or concerns. This class will cover sensitive topics such as child maltreatment. Any student should feel free to leave the class when they feel upset or disturbed by the material covered, and please feel free to make an appointment with the instructor to discuss any potential concerns about sensitive topics.
- I expect students to uphold the UC Davis Code of Academic Conduct as outlined online ([http://sja.ucdavis.edu/cac.html](http://sja.ucdavis.edu/cac.html)).
- Please remember to verify your Academic Participation through participate.ucdavis.edu.
- Make a friend in class to contact in case of absences for notes, announcements, etc. Do not e-mail the instructor asking what you missed in class. You can follow up with the instructor for clarification after reviewing missed materials with help from fellow students.
- If you want to record lectures, you need the permission of the instructor first. Any recordings done with the instructor’s permission may not be shared, sold, put on the internet, or otherwise distributed in any form. Any unauthorized recording and distribution of lectures will be referred to Student Judicial Affairs.
- If you are a student that requires accommodations to assist with your learning, and that have been verified by the campus disability center, please let the instructor know immediately. We will do our best to provide reasonable accommodations to help you have the most optimal learning experience for you.
- Any noted errors in grading, score calculations, and/or grading disputes must be submitted in writing within 24 hours of the grade being released and include reasons for why any grade change is warranted. After that date, no further changes to grades will be considered.
- I will respond to e-mails as promptly as possible. If you have sent me an e-mail, please wait at least 2 full business days for my response before e-mailing again. For example, if you e-mail me on a Friday and I can’t respond right away, please wait until the end of the day next Tuesday (two full business days) before e-mailing again.
- Most importantly, if you have any questions, concerns, or need for clarification, please let me know at the beginning of the quarter.

Note: The mode of grading will be other than that listed in the General Catalog. Because the course is listed as P/NP, each student has the option of reinstating the original grading mode in the following way. By the usual P/NP deadline (the 25th day of instruction) the student must take a copy of the syllabus to the Office of the Registrar and file a 'Grading Variance Exception' petition.

Note: This class will require in-class and out of class work that amounts to 4 units. Please be sure that you have registered for 4 units for this course.
Lectures

Students will be responsible for taking notes on lectures; none will be handed out. PDF copies of the slides will be available on Canvas before lecture. Use of laptops can be distracting for other students in the course; thus, it is expected that if laptops are used, they will be used strictly for the purpose of taking notes or for participating in small-group activities. I reserve the right to ask any student to turn off their laptop if it becomes too distracting for myself or other students during lecture.

In-class Activities and Written Assignments

Attendance and active participation in class discussions and activities will be critical in making sure you complete the learning objectives for the course. Throughout the quarter, there will be 10 in-class activities/brief writing assignments that will need to be submitted at the end of class and will count for 5 points each. The dates for these assignments will not be announced in advance. If you are absent on the day of an in-class assignment, you will receive a 0 for that assignment. There will be no make-ups for these assignments, even if you have a doctor’s note to verify your absence. Instead, the lowest score for one of these assignments will be dropped at the end of the quarter (so if you miss one assignment and receive a 0, this one will be dropped). The total points available from class activities and written assignments is 45 (10 assignments, the lowest score is dropped, for a total of 9 assignments x 5 points each = 45 points).

Exams

There will be three exams throughout the quarter that will be a combination of multiple choice, fill in the blank, and short answer questions focused on material covered in lectures and in readings. Exams will not be cumulative; in other words, the first exam will include material covered during the first third of the quarter, the second exam will include material covered during the middle third of the quarter, and the third exam will include material covered during the last third of the quarter.

There will be no makeup exams except in the event of a documented emergency. Written documentation from an appropriate source will be required to verify an unavoidable reason for missing the exam. You must contact the instructor as soon as possible (preferably before the exam) in event of an emergency, otherwise you risk receiving zero points. Do not be late to exams. When the first exam to be completed has been turned in, no exams will be handed out after this point.

Paper # 1

Write a 3-5 page (3 page minimum, 5 page maximum) double-spaced paper in the style of a science article in The Atlantic that describes current research examining how a specific stressor affects a specific aspect of human development. Example stressors include: poverty, discrimination, major stressful life events, exposure to violence, child maltreatment, bullying/cyberbullying, etc. Examples of a specific aspect of human development include: attachment, academic performance, pubertal development, mental health, dementia, etc. The
developmental outcome you examine can be biological (e.g. puberty; physical health), cognitive (e.g., dementia; memory; academic performance), psychological (e.g., depression), or social (e.g. attachment; romantic relationships; parenting). For this assignment, make sure to focus on one specific stressor and one specific outcome. You can use research articles that examine how a stressor earlier in development (e.g., childhood poverty) affects an outcome later in development (e.g., memory in old age). Your paper should focus on describing 2 empirical studies in sufficient detail that a reader can understand the major methods, results, and conclusions of the studies. The articles you select to write about for your paper should be empirical (contain a methods and results section), published in peer-reviewed journals, and have a publication date from 2010-2020. Each of these studies should be clearly related to your specific stressor and specific outcome. This means the reference page should have 2 peer-reviewed journal articles as references. The following articles can be used as examples for style, writing, and content (PDFs of these articles available on Canvas):

“A poor childhood could hurt your memory in old age” The Atlantic

“How the stress of racism affects learning” The Atlantic

**Note: These example articles include interviews and quotes with the study authors and other experts. You do not need to include interviews or quotes for this assignment. Rather, your writing should focus on describing the methods/results and major takeaways of the study for a general (non-scientific) audience.

Formatting: Your paper should include a title page with the title of your article (this does not count towards the 3-5 page requirement), page numbers, and a reference page formatted in APA style (the reference page does not count towards the 3-5 page requirement). It should be double-spaced, with 1 inch margins, written in Times New Roman 12 point font. Note that because this is in the style of a news article, you should not use APA style in-text citations in the paper—instead look at the Atlantic article examples to see how to introduce the studies.

This paper is worth 25 points. Points will be assessed based on the following:

Introduction (4 points)
- Does the introductory paragraph clearly explain the topic of this article? Does the topic of this article focus on one specific stressor and one specific outcome? Does the introductory paragraph capture the reader’s attention and demonstrate why this topic is important and/or interesting?

Description of studies (10 points)
- Are the major methods, results, and conclusions/takeaways from each study described in the student’s own words? Would a general audience reader be able to understand how the studies were conducted (e.g., how major variables were measured, what study design was
used, ages of the participants, etc.)? Are the major results and takeaways from the studies clear?

Conclusion (4 points)
- Does the concluding paragraph summarize the major takeaways of the two studies? Does it discuss similarities or differences in the methods or results of these studies? Does the conclusion describe future directions for research or policy (e.g., future studies that should be conducted to answer unresolved questions, or changes to policy or new interventions that could be developed based on this research)?

Appropriateness of writing for a general audience news outlet (3 points)
- Does the paper have the correct writing style and tone for a general interest news publication such as The Atlantic? Are terms that would be unfamiliar to a non-scientific audience defined or explained in the paper? Is the paper professional in tone (in other words, not too casual) and written in a way that would be clear to the general public?

Formatting, APA references, spelling and grammar (4 points)
- Are formatting requirements followed including: title page, page numbers, reference page, double-spacing, page limits (3 page minimum, 5 page maximum), 1 inch margins, 12 point Times New Roman font? Does the reference page use correct APA formatting? Is the paper written well? Is it free of spelling or grammatical errors?

This paper is due February 11 by 5 pm, to be submitted online on Canvas. Papers will only be accepted in electronic form submitted through Canvas. We will not accept hard copies of papers. We will use the date of submission on Canvas to determine whether a paper has been submitted late. Plagiarism will not be tolerated and will result in a score of 0 on the paper. It is expected that students will not leave this paper until the last minute and will start it far in advance of the deadline; therefore, sickness is not an excuse for not turning in a paper. If a student is sick or unable to attend class, the electronic copy must still be submitted online by the due date in order to not have points deducted for lateness.

Papers submitted late will receive the following point deductions (the submission time on Canvas will be used to determine whether a paper is submitted late):

- Papers submitted after February 11, 5 pm but before February 12, 5 pm: 3 point deduction
- Papers submitted after February 12, 5 pm but before February 13, 5 pm: 5 point deduction
- Papers submitted after February 13, 5 pm but before February 14, 5 pm: 7 point deduction
- Papers submitted after February 14, 5 pm: No longer accepted for credit

Paper #2

Write a 5-6 page double-spaced grant proposal in which you propose a new intervention to promote resilience to a specific stressor in a specific population. This grant proposal will also include a study designed to test whether this new intervention was effective in promoting resilience to the stressor. Grant applications are typically written for a broad audience (some scientists, some non-scientists) and are designed to convince the reader that the proposed intervention and research are likely to be successful and are a good use of government/nonprofit funding. For this intervention, you should clearly specify the population you wish to target (e.g.,
toddler, adolescents, parents, families, high school students, college students, etc.) and the specific stressor you wish to target (e.g., poverty, neighborhood violence, domestic violence, discrimination, bullying, etc.) by promoting resilience to that stressor. Note: for this assignment, you should be increasing resilience to a stressor; do not focus on interventions designed to reduce a stressor itself (e.g., do not design an intervention to lower poverty, decrease discrimination, or reduce neighborhood violence—these are good goals, but not the purpose of this assignment!).

You should also clearly write out a protocol that explains the key component(s) of the intervention and how you will implement this protocol. Your intervention could target the individual (e.g., yoga, mindfulness meditation, teaching optimism or active coping strategies, etc.), groups (e.g., forming peer groups to increase social support in college students), schools (e.g., training teachers to change an aspect of the classroom or their teaching to promote resilience in students), parents (e.g., a parent intervention to promote specific aspects of parenting), or communities (e.g., developing a neighborhood afterschool program). Your intervention could potentially target multiple of these populations, but make sure to keep it feasible (see next section on feasibility).

The protocol and intervention you propose should be feasible to conduct within a 2-5 year period with a small staff of 2-4 people (for example, do not propose to conduct mindfulness meditation training for all adolescents in the U.S., since this would be impossible in 2-5 years, but you could propose to conduct this in a selection of high-risk students from local schools). Because the government agency reading your grant may include politicians and others who are not scientists, your grant should be written to be understandable for a broad audience (in other words, avoid using scientific jargon and include definitions for any terms that a non-scientist may not know). It should be written in a scientific and professional tone. Your grant should be divided into the following sections, with each section heading formatted in bold print (use these exact titles for the section headings):

A. Significance (about 1 page):
   - Describe the significance/negative impact of the stressor you are trying to target using scientific evidence to back up your arguments. This can include the prevalence of the stressor, the health impacts of the stressor, the long-term effects of this stressor, etc. This can include a discussion of lifespan impacts of the stressor (e.g., effects of the stressor on health or well-being across different ages). Your goal in this section is to convince the reader of this grant proposal that this stressor is a critical problem and that funding your intervention to promote resilience to this stressor is a good use of government funding. Make sure to support all arguments with references to peer-reviewed journal articles (cite at least 3 peer-reviewed journal articles in this section; you can reuse journal articles you cited in Paper #1 if you want).

B. Target Population (about 1/2 page-1 page):
   - Describe the target population for your intervention, clearly defining the ages and/or developmental stage of potential participants (for example, children ages 4-6 living under the poverty line in Yolo County). Discuss why it is important to focus on this age group specifically and how the stressor you are focusing on affects this age group specifically. Make sure to support all arguments with references to peer-reviewed journal articles (cite
at least 2 peer-reviewed journal articles that are different from those cited in the significance section). How will stressor exposure/risk in your target population be defined? For example, if your target population is high school students and your stressor is neighborhood violence, how will you identify participants for the intervention? Will they be recruited from neighborhoods with high violent crime rates?

C. Intervention Protocol (about 2 pages):

- Provide specific descriptions of the intervention protocol you propose. For example, if you are proposing an expressive writing intervention, describe where the intervention will take place (in schools, during extracurricular activities, etc.), what types of writing prompts will be given, and who will administer the interventions (teachers, school counselors, etc.). You can propose an intervention that has already been used in other populations or you can get creative here and propose new intervention approaches that you think would affect one of the stress vulnerability or resilience factors we have discussed in class (for example, maybe you think that having adolescents volunteer at an animal shelter would increase resilience by decreasing their loneliness and their susceptibility to stress). Make sure it is clear how each activity in your intervention protocol is expected to affect a stress vulnerability or resilience factor (e.g., make it clear that volunteering at an animal shelter is expected to decrease loneliness, which is a stress vulnerability factor; cite references to show that loneliness increases vulnerability to stress). Cite at least 2 peer-reviewed journal articles that are different from those cited in the first two sections.

D. Research Protocol (about 1-2 pages)

- Describe the research protocol you will use to test the effectiveness of your intervention. How will exposure to the stressor of interest be defined, measured, and operationalized? How will resilience be defined, measured, and operationalized? How will you test whether the intervention is effective at improving resilience? What will your dependent variable(s) be and how will you measure these? What type of research design will you use (e.g., experimental, correlational, cross-sectional, longitudinal, etc.)?

Formatting: Your paper should include a title page (this does not count towards the 5-6 page requirement), page numbers, and a reference page formatted in APA style (the reference page does not count towards the 5-6 page requirement). It should be double-spaced, with 1 inch margins, written in Times New Roman 12 point font. For this paper, use APA style in-text references.

This paper will be worth a total of 40 points. The points will be assessed accordingly:

Significance (8 points)

- Does the significance section identify a clear stressor and explain the significance of its effects on human development, such as effects on health or educational attainment, long-term effects on adult outcomes, etc.?
- Does this section provide a convincing argument to grant reviewers regarding why it is important to conduct the proposed intervention and research?
- Does this section cite relevant research to support all arguments made?

Target population (6 points)

- Does the target population section identify a specific population for the intervention,
including specifying specific ages and/or a specific developmental stage?

- Does this section clearly explain why it is important to target this age group/developmental stage in the intervention?
- Does this section clearly explain how the stressor affects this age group specifically?
- Is it clear how the target population will be identified and how exposure to the stressor will be defined? Is the strategy for identifying participants exposed to the stressor feasible and well-defined?
- Does this section cite relevant research to support arguments?

**Intervention protocol (8 points)**

- Are the intervention activities clearly described so that a grant reviewer would understand all the parts of the intervention and how they would be implemented?
- Is there a clear connection made between each activity in the intervention and the stress vulnerability factor or resilience factor it is expected to affect? If the intervention aims to reduce a stress vulnerability factor (e.g., rumination), is relevant research cited to show that this factor increases vulnerability to the stressor? If the intervention aims to increase a resilience factor (e.g., social support), is relevant research cited to show that this factor promotes resilience to the stressor?
- Is the intervention protocol feasible and likely to be successfully completed in 2-5 years with a staff of about 2-4 people?

**Research protocol (8 points)**

- Are all variables measured for the protocol (including variables used to define stress exposure and resilience) clearly explained, including how they will be defined, measured, and operationalized?
- Does the research protocol include a method to test the effectiveness of the proposed intervention? Is the research protocol methodologically and scientifically sound?

**Appropriate tone for a grant application (4 points)**

- Does the paper have an appropriate, professional tone and writing style for a grant application?
- Is the grant application written so that it can be understood by a wide audience? Are scientific jargon terms such as HPA axis defined and explained? You can assume that your readers understand basic scientific research design terms (e.g., correlation, experiment, cross-sectional, self-report, observational etc.), so you do not need to define research design terms.
- Are arguments (e.g., why this is an important stressor; why you selected the developmental stage you selected to target, etc.) clear and easy to understand? Are the arguments convincing? Would this convince a reader that the intervention is likely to be successful and is a good use of government funding?

**General writing (6 points)**

- Are formatting requirements followed including: title page, page numbers, reference page, double-spacing, page limits (5 page minimum, 6 page maximum), 1 inch margins, 12 point Times New Roman font? Is correct APA formatting used throughout the paper and in the reference section? Is the paper written well? Is it free of spelling or grammatical errors?

This paper is due March 16 by 5 pm, to be submitted online on Canvas. Papers will only be accepted in electronic form submitted through Canvas. We will not accept hard copies of papers.
We will use the date of submission on Canvas to determine whether a paper has been submitted late. Plagiarism will not be tolerated and will result in a score of 0 on the paper. It is expected that students will not leave this paper until the last minute and will start it far in advance of the deadline; therefore, sickness is not an excuse for not turning in a paper. If a student is sick or unable to attend class, the electronic copy must still be submitted online by the due date in order to not have points deducted for lateness.

Papers submitted late will receive the following point deductions (the submission time on Canvas will be used to determine whether a paper is submitted late):

Papers submitted after March 16, 5 pm but before March 17, 5 pm: 5 point deduction
Papers submitted after March 17, 5 pm but before March 18, 5 pm: 10 point deduction
Papers submitted after March 18, 5 pm but before March 19, 5 pm: 15 point deduction
Papers submitted after March 19, 5 pm: No longer accepted for credit

Grading

The following is a breakdown of the points for each assignment and determination of the final grade:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td>In-class activities and written assignments</td>
<td>45 points</td>
</tr>
<tr>
<td>Exam #1</td>
<td>35 points</td>
</tr>
<tr>
<td>Exam #2</td>
<td>35 points</td>
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<tr>
<td>Exam #3</td>
<td>35 points</td>
</tr>
<tr>
<td>Paper #1</td>
<td>25 points</td>
</tr>
<tr>
<td>Paper #2</td>
<td>40 points</td>
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</tbody>
</table>

Total possible points: 215 points

The following grading scale will be used to determine letter grades:

- 97-100% = A+
- 93.00001% - 96.9999% = A
- 90.00001% - 92.9999% = A-
- 87-89.999% = B+
- 83-86.999% = B
- 80-82.999% = B-
- 77-79.999% = C+
- 73-76.999% = C
- 70-72.999% = C-
- 67-69.999% = D+
- 63-66.999% = D
- 60-62.999% = D-
- < 60% = F
**Lecture and Reading Schedule**

Note: Please read the assigned readings before that day’s class. Many of the in-class group activities, worksheets, and writing assignments will be based on the assigned reading, and will assume that you have done the reading already. Please also bring the reading to class (either as a printout or on your laptop) so you can reference it during group and in-class assignments.

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 6</td>
<td>Course Introduction and Expectations</td>
<td>Defining and Measuring Stress</td>
</tr>
<tr>
<td>Jan 8</td>
<td>Guest Lecturer: Leah Hibel Biological pathways of stress</td>
<td>Harrington Chapter 3</td>
</tr>
<tr>
<td>Jan 13</td>
<td>Guest Lecturer: Leah Hibel Effects of prenatal and early experiences of stress</td>
<td>No reading</td>
</tr>
<tr>
<td>Jan 15</td>
<td>Stress and adolescent development</td>
<td>Twenge et al. (2017), Clinical Psychological Science</td>
</tr>
<tr>
<td>Jan 20</td>
<td><strong>No class for university holiday (Martin Luther King Jr. Day)</strong></td>
<td></td>
</tr>
<tr>
<td>Jan 22</td>
<td>Effects of stress in adulthood and aging</td>
<td>Harrington Chapter 5</td>
</tr>
<tr>
<td>Jan 27</td>
<td><strong>Exam #1</strong></td>
<td></td>
</tr>
<tr>
<td>Jan 29</td>
<td>Biological risk factors that increase susceptibility to stress</td>
<td>Yong (2019) The Atlantic</td>
</tr>
<tr>
<td>Feb 3</td>
<td>Psychological and contextual influences on stress</td>
<td>Sapolsky (2005) Scientific American;</td>
</tr>
<tr>
<td>Feb 5</td>
<td>Trauma</td>
<td>Masten Chapter 5</td>
</tr>
<tr>
<td>Feb 10</td>
<td>Defining Resilience Biological factors associated with resilience</td>
<td>Masten Chapter 1</td>
</tr>
<tr>
<td>Feb 12</td>
<td>Personality and psychological factors associated with resilience</td>
<td>Harrington Chapter 6</td>
</tr>
<tr>
<td>Feb 17</td>
<td><strong>No class for university holiday</strong></td>
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<tr>
<td>Feb 19</td>
<td><strong>Exam #2</strong></td>
<td></td>
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<tr>
<td>Feb 24</td>
<td>Social and family factors associated with resilience</td>
<td>Walsh (2002), Family Relations</td>
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<tr>
<td>Date</td>
<td>Topic</td>
<td>References</td>
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<tr>
<td>Feb 26</td>
<td>Community, contextual, and cultural factors associated with resilience</td>
<td>Masten Chapter 10</td>
</tr>
<tr>
<td>Mar 2</td>
<td>Interventions to promote resilience: Neurobiological and cognitive interventions</td>
<td>Cameron et al. (2018), <em>Child Abuse &amp; Neglect</em></td>
</tr>
<tr>
<td>Mar 4</td>
<td>Interventions to promote resilience: Lifestyle factors</td>
<td>Machado (2014) <em>The Atlantic</em></td>
</tr>
<tr>
<td>Mar 9</td>
<td>Interventions to promote resilience: Interventions at the family, school, neighborhood, community, or public policy level</td>
<td>Hawkins et al. (2005) <em>Archives of Pediatric Adolescent Medicine</em></td>
</tr>
<tr>
<td>Mar 11</td>
<td><strong>Exam #3</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Paper Due Dates:**

Feb 11 Paper #1 due on Canvas by 5 pm

Mar 16 Paper #2 due on Canvas by 5 pm