

# Jessica A. Gorski

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## Education

**Doctor of Philosophy, Department of Molecular, Cellular and Developmental Biology**

University of Colorado, Boulder, Colorado 1994-2001

Doctoral thesis: Characterization of Forebrain-Specific Brain Derived Neurotrophic Factor Mice

**Bachelor of Science, Departments of Biochemistry and Molecular Biology**

University of Wisconsin, Madison, Wisconsin 1989-1994

## Awards and Fellowships

2008-2010 Butcher Seed Grant (co-authored with KR Jones and AE Palmer)  
2003-2006 American Heart Association Postdoctoral Fellowship  
1995-1997 Colorado Institute for Research and Biotechnology Predoctoral Fellowship  
1992-1993 Mary Shine Peterson Award for Undergraduate Research in Biochemistry

## Teaching Experience

### Instructor of Record

<b>Principles of Genetics MCDB2150</b> (17 sections) Three-credit introductory genetics course geared for MCDB majors.	CU Boulder	<b>01/16-05/24</b> (10-22 students)
<b>Introduction to Cell and Molecular Biology MCDB1150</b> (19 sections) Three-credit introductory molecular biology course geared for MCDB majors.	CU Boulder	<b>08/15-12/24</b> (18-22 students)
<b>Introductory Biology EBIO1210/1220</b> (23 sections) Three-credit introductory biology course geared toward pre-health majors	CU Boulder	<b>08/13-05/24</b> (15-21 students)
<b>Developmental Neurobiology NRSC4572</b> (2 sections) Senior three-credit capstone course integrating cell biology and neural development (31-47 students)	CU Boulder	<b>01/24-07/24</b>
<b>Making of the Self ARSC1550</b> (2 sections) One-credit seminar geared toward incoming freshmen	CU Boulder	<b>08/20-12/20</b> (10-16 students)
<b>Global Health Senior Seminar IAFS4500</b> (1 section) Senior three-credit capstone course in diverse topics in global health.	CU Boulder	<b>01/14-05/14</b> (12 students)
<b>Behavioral Neuroscience PSYC4054</b> (1 section) Three-credit critical thinking course studying a wide range of neuroscience topics.	UC Denver	<b>08/13-12/13</b> (15 students)
<b>Hormones and Behavior PSYC3263</b> (1 section) Three-credit course with focus on the role of hormones in human behavior.	UC Denver	<b>01/13-04/13</b> (32 students)
<b>Introduction to Neuroscience Laboratory NS261</b> (1 section) One credit neuroscience laboratory emphasizing experiential learning.	Regis College	<b>01/13-04/13</b> (24 students)
<b>Biological Basis of Behavior PSYC2220</b> (3 sections) Three-credit course with focus on understanding human behavior through emphasis on structure and function of the nervous system.	UC Denver	<b>01/11-04/13</b> (70-115 students)
<b>Introduction to Neuroscience NS260</b> (3 sections) Three-credit course with focus on understanding human behavior through emphasis on structure and function of the nervous system.	Regis College	<b>08/12-04/13</b> (12-25 students)
<b>Developmental Biology BZ311</b> (2 sections)	CSU Ft. Collins	<b>06/09-08/10</b>

## Jessica A. Gorski

Four-credit course using genetics, molecular, and cell biology to understand mammalian development and human health. (35-45 students)

**General Biology for Majors BIO1080** (1 section) MSC Denver **01/10-05/10**  
Three-credit course for pre-nursing and nutrition students. (24 students)

### Other Teaching Positions

**Post-baccalaureate MCDB 1150 Tutor** CU Boulder **09/20-12/24**  
Provide supplemental learning opportunities for 10-15 post-baccalaureate pre-medical students.

**HHMI Biological Sciences Initiative Program Member** CU Boulder **09/00-05/01**  
Led over 50 classroom hours of inquiry-based K-12 classroom presentations.

**Student Academic Services Center Tutor** CU Boulder **09/97-06/98**  
Tutored small groups in genetics and cellular, developmental, and molecular biology.

**Teaching Assistant Developmental Biology MCDB 4660** CU Boulder **01/97-06/97**  
Coordinated course laboratory and lecture and developed an independent class project.

### Consultations on Teaching

Served as lead coordinator for the Graduate Teacher Program. CU Boulder **09/09-05/10**  
Helped five Graduate Students develop discipline-specific pedagogy workshops.  
Participated in development of pedagogy course for interdisciplinary science.  
Conducted 15 one-on-one video consultations of classroom teaching.  
Led workshops on the Scholarship of Teaching and Learning.  
Led workshops on reading scientific journals and giving presentations.

### Teacher Training

**Learning by Design Fellow** CU Boulder **08/23-12/23**  
Developed active learning for strategies for new course: NRSC 4572

**Just and Equitable Teaching micro-credential** CU Boulder **04/23**

**Participated in FTEP, ASSETT, OEDECE and RAP workshops** CU Boulder **04/15-12/22**  
Topics included: Flipping the classroom and Teaching using the Socratic method,  
Use of clickers in small classes, Devising writing assignments, Uncomfortable  
conversations, Dialogic Practices to Foster Community in Online Teaching,  
Staying in Conversation About Racism "Meeting the Moment with Awareness" and  
"Acting with Integrity"

**Participated in National Academies Mountain West Summer Institute on Undergraduate  
Education in Biology** Evergreen State College **10/16**  
Weekend intensive workshop reviewing implementation of new teaching practices

**Participated in Conference on Case Study Teaching in Science** SUNY Buffalo **09/15-09/15**  
Two day workshop to develop case studies and POGIL activities for biochemistry, genetics and  
ecology content

**Participated in National Academies Mountain West Summer Institute on Undergraduate  
Education in Biology** CU Boulder **06/15-06/15**  
Weeklong intensive workshop on developing scientific teaching practices

**Participated in over 20 Graduate Teacher Program Workshops** CU Boulder **09/09-05/10**  
Topics included: effective assessments, student engagement strategies,  
classroom management, teaching to diversity, group learning, etc.

**Participated in Discipline-Based Educational Research Seminars** CU Boulder **09/09-05/10**  
Discussion topics included: student attitudes about learning, use of pre- and  
post-tests, technology in the classroom, developing formative assessments, etc.

<b>Audited Teaching Through Technology Online Course</b> Developed Just in Time Teaching, Wikis, and blogs to support student learning.	UW, Madison	<b>01/10-05/10</b>
<b>Audited Teaching and Learning MCDB 5650</b> Developed strategies for active learning and effective assessments.	CU Boulder	<b>08/07-12/07</b>
<b>Participated in Curzan and Damour Teacher Workshop</b> Analyzed presentation style and increased interactive learning in large groups.	UC Denver	<b>09/05</b>
<b>Undergraduate Student Research Mentor</b> Mentored four honors research students, seven independent study students, and four summer internship students.	CU Boulder	<b>08/98-05/09</b>
Committee member for three honors theses	CU Boulder	<b>08/21-04/23</b>

## Research Experience

<b>Research Associate with Professor Mark Dell'Acqua</b> Performed biochemical and behavioral characterization of mice carrying targeted mutations of AKAP5, which encodes a synaptic scaffolding protein.	CU Denver	<b>05/10-05/14</b>
<b>Research Associate with Associate Professor Kevin Jones</b> Performed biochemical characterization of forebrain-restricted Brain Derived Neurotrophic Factor mice.	CU Boulder	<b>11/06-05/09</b>
<b>Postdoctoral Fellow with Associate Professor Mark Dell'Acqua</b> Studied the targeting of signaling scaffolding proteins in neurons and epithelial cells.	CU Denver	<b>07/01-11/06</b>
<b>Graduate Student with Assistant Professor Kevin Jones</b> Studied the cellular, anatomical and behavioral role of Brain Derived Neurotrophic Factor in the mouse central nervous system.	CU Denver	<b>09/94-06/01</b>
<b>Summer Intern with Dr. Guy Vigers</b> Amgen, Boulder, CO Performed protein crystallization for X-ray crystallography.		<b>06/97-08/97</b>
<b>Independent Student with Professor Anthony Durston</b> Dutch Institute for Developmental Biology, Utrecht, The Netherlands Studied homeobox gene expression in axis patterning of <i>Xenopus Laevis</i> .		<b>09/93-06/94</b>

## Publications

Sanderson JL, Freund RK, **Gorski JA**, Dell'Acqua ML (2021)  $\beta$ -Amyloid disruption of LTP/LTD balance is mediated by AKAP150-anchored PKA and Calcineurin regulation of  $Ca^{2+}$ -permeable AMPA receptors. **Cell Rep.** 37:109786.

Sanderson JL, **Gorski JA**, Dell'Acqua ML (2016) NMDA Receptor-Dependent LTD Requires Transient Synaptic Incorporation of  $Ca^{2+}$ -Permeable AMPARs Mediated by AKAP150-Anchored PKA and Calcineurin. **Neuron** 89:1000-1015

Murphy JG, Sanderson JL, **Gorski JA**, Scott JD, Catterall WA, Sather WA, Dell'Acqua ML. (2014) AKAP-anchored PKA maintains neuronal L-type calcium channel activity and NFAT transcriptional signaling. **Cell Rep.** 7:1577-88

Sanderson JL, **Gorski JA**, Gibson ES, Lam P, Freund RK, Chick WS, Dell'Acqua ML (2012) AKAP150-Anchored Calcineurin Regulates Synaptic Plasticity by Limiting Synaptic Incorporation of  $Ca^{2+}$ -Permeable

AMPA Receptors **J Neurosci** 32:15036-52

Vigers AJ, Amin DS, Talley-Farnham T, **Gorski JA**, Xu B, Jones KR. (2012) Sustained expression of brain-derived neurotrophic factor is required for maintenance of dendritic spines and normal behavior. **Neuroscience** 212:1-18.

Dittmer PJ, Miranda JG, **Gorski JA**, Palmer AE. (2009) Genetically encoded sensors to elucidate spatial distribution of cellular zinc **J Biol Chem** 284:16289-16297.

Berger J, Berger S, Tuoc TC, D'Amelio M, Cecconi F, **Gorski JA**, Jones KR, Gruss P, Stoykova A. (2007) Conditional activation of Pax6 in the developing cortex of transgenic mice causes progenitor apoptosis. **Development** 134:1311-22.

Willaime-Morawek S, Seaberg RM, Batista C, Labbé E, Attisano L, **Gorski JA**, Jones KR, Kam A, Morshead CM, van der Kooy D. (2006) Embryonic cortical neural stem cells migrate ventrally and persist as postnatal striatal stem cells. **J Cell Biol** 175:159-68.

Dell'Acqua ML, Smith KE, **Gorski JA**, Horne EA, Gibson ES, Gomez LL. (2006) Regulation of Neuronal PKA Signaling through AKAP Targeting Dynamics. **Eur J Cell Biol** 85:627-33

Smith, KE, **Gorski, JA**, Dell'Acqua, ML (2005) Regulation of AMPA receptor activity by associated proteins. **Cellscience Reviews** 2:156-168.

**Gorski JA**, Gomez LL, Scott JD, Dell'Acqua ML. (2005) Association of an AKAP Signaling Scaffold with Cadherin Adhesion Molecules in Neurons and Epithelial Cells. **Mol Biol Cell** 16:3574-3590

Depaepe V, Suarez-Gonzalez N, Dufour A, Passante L, **Gorski JA**, Jones KR, Ledent C, Vanderhaeghen P. (2005) Ephrin/Eph Signaling Controls Brain Size by Regulating Apoptosis of Neural Progenitors. **Nature** 435:1244-1250.

Liu G, Beggs H, Jurgensen C, Park HT, Tang H, **Gorski J**, Jones KR, Reichardt LF, Wu J, Rao Y. (2004) Netrin requires focal adhesion kinase and Src family kinases for axon outgrowth and attraction. **Nat Neurosci** 7:1222-1232.

Baquet ZC, **Gorski JA**, Jones KR. (2004) Early striatal dendrite deficits followed by neuron loss with advanced age in the absence of anterograde cortical brain-derived neurotrophic factor. **J Neurosci** 24:4250-4258.

Li HS, Wang D, Shen Q, Schonemann MD, **Gorski JA**, Jones KR, Temple S, Jan LY, Jan YN. (2003) Inactivation of Numb and Numlike in embryonic dorsal forebrain impairs neurogenesis and disrupts cortical morphogenesis. **Neuron** 40:1105-1118.

Beggs HE, Schahin-Reed D, Zang K, Goebbels S, Nave KA, **Gorski JA**, Jones KR, Sretavan D, Reichardt LF. (2003) FAK deficiency in cells contributing to the basal lamina results in cortical abnormalities resembling congenital muscular dystrophies. **Neuron** 40:501-514.

**Gorski JA\***, Balogh SA\*, Whener JM, Jones KR. (2003) Learning deficits in forebrain-restricted brain-derived neurotrophic factor mutant mice. **Neuroscience** 121:341-354.

**Gorski JA**, Zeiler SR, Tamowski S, Jones KR. (2003) BDNF is required for the maintenance of cortical dendrites. **J Neurosci** 23:6856-6865.

**Gorski JA**, Talley T, Qui M, Puelles L, Rubenstein JL, Jones KR. (2002) Cortical excitatory neurons and glia, but not GABAergic neurons, are produced in the Emx1-expressing lineage. **J Neurosci** 22:6309-6314.

**Gorski JA**, Jones KR. (1999) Efficient bicistronic expression of *cre* in mammalian cells. **Nucleic Acids Research** 27:2059-2061.

Ciesiolka J, **Gorski J**, Yarus M. (1995) Selection of an RNA domain that binds Zn<sup>2+</sup>. **RNA** 1:538-550.

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Maslanka K, Piatek T, **Gorski J**, Yassai M, Gorski J (1995) Molecular analysis of T cell repertoires. Spectratypes generated by multiplex polymerase chain reaction and evaluated by radioactivity or fluorescence. *Hum Immunol* 44:28-34.

## **Scientific Engagement**

Co-President of Postdoctoral Association of Colorado in Denver and Boulder  
Judge for graduate student posters at Front Range Neuroscience Meeting and undergraduate posters at McNair Scholars Research Symposium and Regis College Research Methods Symposium.  
Led training seminars for Bioscience Undergraduate Research Skills and Training (BURST) and Undergraduate Research Opportunities Program (UROP) through Biological Sciences Initiative.  
Led a full-day workshop for High School Teachers through Biological Sciences Initiative. Boulder, CO

## **Scientific Memberships**

Front Range Neuroscience Group  
American Society for Cell Biology  
Society for Neuroscience