

1. Record Nr.	UNINA9910777041003321
Titolo	Oxidative stress, exercise, and aging // Helaine M. Alessio, Ann E. Hagerman, editors
Pubbl/distr/stampa	London : , : Imperial College Press Hackensack, NJ : , : distributed by World Scientific Pub., , 2006 ©2006
ISBN	1-281-86722-5 9786611867225 1-86094-912-6
Descrizione fisica	1 online resource (xii, 171 pages) : illustrations
Altri autori (Persone)	AlessioHelaine M HagermanAnn E
Disciplina	612.22
Soggetti	Oxidative stress Exercise - Physiological aspects Aging - Physiological aspects
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	1. Chemistry of reactive oxygen species and antioxidants / D.C. Close and A.E. Hagerman 2. Oxidative stress in plants and animals / D.C. Close and A.E. Hagerman 3. The exercise continuum / R.L. Wiley 4. Oxidative stress and muscle size, type, and action / H.M. Alessio 5. Oxidative stress across the exercise continuum / H.M. Alessio 6. Oxidative stress and antioxidant defense: Effects of aging and exercise / L.L. Ji 7. Muscle, oxidative stress and aging / J.S. Moylan, W.J. Durham, and M.B. Reid 8. Aging, exercise, antioxidants, and cardioprotection / J. Quindry and S. Powers 9. Genetic expressions: oxidative stress, exercise, and aging / N.B. Schweitzer and H.M. Alessio
Sommario/riassunto	This book brings together some of the leading researchers in the actively investigated field of oxidative stress, an area of study which is of importance to human health and disease. It examines oxidative stress in a variety of models, at rest and after exercise, in young and old. Key concepts of oxidative stress, exercise and aging are presented in clear and easy-to-understand terms. Oxidative stress in different

types of exercises - isometric, isotonic and sports - is explained in detail, with several chapters focusing on acute and chronic adaptations of skeletal muscles following both aerobic and non-aerobic exercises. The book includes current knowledge of the underlying mechanisms influencing health and disease processes associated with oxidative stress.

2. Record Nr.	UNINA9910568278503321
Autore	Pelaez Nancy J.
Titolo	Trends in Teaching Experimentation in the Life Sciences : Putting Research into Practice to Drive Institutional Change // edited by Nancy J. Pelaez, Stephanie M. Gardner, Trevor R. Anderson
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2022
ISBN	9783030985929 303098592X
Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (572 pages)
Collana	Contributions from Biology Education Research, , 2662-2327
Disciplina	570.78
Soggetti	Science - Study and teaching Education - Curricula Educational tests and measurements Teaching Science Education Curriculum Studies Assessment and Testing Didactics and Teaching Methodology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Part I. Vision and Initiation Phase: Envisioning What, When, and How Students Learn about Biological Experimentation -- 1. The problem with teaching experimentation: Development and use of a framework to define fundamental competencies for biological experimentation -- 2. Using data to identify anticipated learning outcomes for new and

existing curricula -- 3. ACE-Bio experimentation competencies across the biology curriculum: When should we teach different competencies and concepts? -- 4. Integrating the five core concepts of biology into course syllabi to advance student science epistemology and experimentation skills -- Part II. Operationalizing and Planning: Designing Instruction to Promote Learning of Biological Experimentation -- 5. Backward designing a lab course to promote authentic research experience according to students' gains in research abilities -- 6. Using the ACE-Bio Competencies resource as a course planning tool to guide students in independent research -- 7. Experiments in data mining: Using digitized natural history collections to introduce students to data science -- 8. A framework for teaching and learning graphing in undergraduate biology -- Part III. Implementation and Student Engagement: Guiding Learners to Do Experiments and Use Representations in Biological Research -- 9. Teaching undergraduate students how to identify a gap in the literature: Design of a visual map assignment to develop a grant proposal research question -- 10. Virtual Microscope: Using simulated equipment to teach experimental techniques and processes -- 11. Introductory biology students engage in guided inquiry: Professional practice experiences develop their scientific process and experimentation competencies -- 12. Feedback and discourse as a critical skill for the development of experimentation competencies -- 13. Engaging students with experimentation in an introductory biology laboratory module -- Part IV. Assessment, Evaluation, and Grading What Students Learn about Biological Experimentation -- 14. Comparison of published assessments of biological experimentation as mapped to the ACE-Bio Competence areas -- 15. Research Across Curriculum Rubric (RAC-R): An adaptable rubric for the evaluation of journal article style lab reports -- 16. Assessing undergraduate research, a high impact practice: Using aligned outcomes to detail student achievement to multiple stakeholders -- 17. Assessment of evidentiary reasoning in undergraduate biology: A lit review and application of the Conceptual Analysis of Disciplinary Evidence (CADE) framework -- Part V. Complementary Frameworks for Guiding Students' Experimentation Practice -- 18. Hybrid labs: How students use computer models to motivate and make meaning from experiments -- 19. Electronic laboratory notebook use supports good experimental practice and facilitates data sharing, archiving and analysis -- 20. Growing innovation and collaboration through assessment and feedback: A toolkit for assessing and developing students' soft skills in biological experimentation -- 21. Biological reasoning according to members of the faculty developer network for undergraduate biology education: Insights from the Conceptual Analysis of Disciplinary Evidence (CADE) framework -- Part VI. Approaches to Biological Experimentation Instruction of Relevance to Biology Education Programs in General -- 22. Teaching successful student collaboration within the context of biological experimentation -- 23. Biochemistry and art: Incorporating drawings, paintings, music, and media into teaching biological science -- 24. Strategies for targeting the learning of complex skills like experimentation to different student levels: The intermediate constraint hypothesis -- 25. Implementing innovations in undergraduate biology experimentation education.

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## Sommario/riassunto

This book is a guide for educators on how to develop and evaluate evidence-based strategies for teaching biological experimentation to thereby improve existing and develop new curricula. It unveils the flawed assumptions made at the classroom, department, and institutional level about what students are learning and what help they

might need to develop competence in biological experimentation. Specific case studies illustrate a comprehensive list of key scientific competencies that unpack what it means to be a competent experimental life scientist. It includes explicit evidence-based guidelines for educators regarding the teaching, learning, and assessment of biological research competencies. The book also provides practical teacher guides and exemplars of assignments and assessments. It contains a complete analysis of the variety of tools developed thus far to assess learning in this domain. This book contributes to the growth of public understanding of biological issues including scientific literacy and the crucial importance of evidence-based decision-making around public policy. It will be beneficial to life science instructors, biology education researchers and science administrators who aim to improve teaching in life science departments. Chapters 6, 12, 14 and 22 are available open access under a Creative Commons Attribution 4.0 International License via [link.springer.com](http://link.springer.com).

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