

# MAJOR TO CAREER GUIDE

## B.S. Physics with a Computational Concentration

### College of Sciences

#### Mission of the College of Sciences

The College of Sciences offers programs in life sciences, chemistry, geoscience, mathematical sciences, physics and astronomy, and water management. The college has created a well-rounded curriculum by combining practical and empirical knowledge with scientific fundamentals and principles, which provides a solid foundation for a successful career in the sciences and other professional programs. The student-faculty relationship, hands-on research, and community service help ensure that students who graduate are prepared for whatever path they choose.

[www.unlv.edu/sciences](http://www.unlv.edu/sciences)

#### About the Computational Physics Career

Computational Physics combines physics, computer science and applied mathematics in order to provide scientific solutions to realistic and often complex problems. Areas of application include the nature of elementary particles, the study and design of materials, the study of complex structures (like proteins) in biological physics, environmental modeling, and medical imaging. A computational physicist understands not only the workings of computers and the relevant science and mathematics, but also how computer algorithms and simulations connect the two.

#### Value of the Computational Physics Degree

The rapid advances in the power of computers has been the primary driving factor in the recent developments in science, engineering, and technology related fields in industry. As a result, computational physicists are in great demand, and numerous jobs are available in both industry and academia. Our graduates will present to the job market and graduate schools, people who possess an in-depth education in physics, mathematics and computing, as well as valuable skills in complex problem-solving and team work.

#### UNLV Academic Advising for Science Majors:

*Academic Advisors who are eager to meet with students about their academic goals and to assist in constructing a plan for graduation. Advisors can also help students understand how their experiences at UNLV can lead to a career in their desired field.*

College of Sciences Advising Center  
Phone: 702-895-2077  
Campus Location: MPE-A 130  
[www.unlv.edu/sciences/advising](http://www.unlv.edu/sciences/advising)

#### Computational Physics BS Career Options

- A graduate degree in physics in areas such as biophysics, condensed matter physics, particle physics, astrophysics to name a few, is required.
- Career in High-performance and scientific computing, in the energy and aerospace sectors, with chemical and pharmaceutical companies, with environmental management agencies.
- Employment in firms that develop scientific software, as well as computer games.
- Research career in an academic, industrial, or national laboratory;
- Teaching career in physics
- Job in Wall Street (Wall Street employers are interested in people with a background in computational physics)

#### UNLV Student Organizations: Computational Physics

*Students are encouraged to get involved with these societies and groups early on!*

UNLV Society of Physics Students  
<https://sites.google.com/site/unlvsp/>  
Sigma Pi Sigma (SPS) <http://www.sigmapisigma.org/>

*Websites for professional physics organizations:*

*American Physical Society <http://aps.org/>  
American Association of Physics Teachers  
<http://aapt.org/>  
American Astronomical Society <http://aas.org/>  
American Institute of Physics <http://www.aip.org/>*

#### Graduate Program: Physics M.S. and PhD

Our department offers both the masters and doctoral degree in physics; both degrees require a research thesis. Before considering our physics department as a possible place to pursue an advanced degree, it is best to explore our faculty's research interests located on the [Physics and Astronomy Home Page](#) overlap with your interests.

<http://physics.unlv.edu/jobs.html>

# Helpful Career Information

## Employers rate candidate soft skills/qualities in order of importance

- 1 Ability to verbally communicate with persons inside and outside the organization
- 2 Ability to work in a team structure
- 3 Ability to make decisions and solve problems
- 4 Ability to plan, organize and prioritize work
- 5 Ability to obtain and process information
- 6 Ability to analyze quantitative data
- 7 Technical knowledge related to the job
- 8 Proficiency with computer software programs
- 9 Ability to create and/or edit written reports
- 10 Ability to sell or influence others

Source: Job Outlook 2013

Courtesy of the National Association of Colleges and Employers

Visit the Career Occupational Handbook to learn more about a specific occupation:

<http://www.bls.gov/ooh/>

The OCH covers hundreds of occupations and describes: What They Do, Work Environment, How to Become One, Pay, and more. Each profile also includes BLS employment projections for the 2010–20 decade.

### Career Exploration/Planning

**FOCUS 2:** UNLV's computerized assessment that profiles your interests, abilities, and values and helps you find a career that's right for you.

<http://hire.unlv.edu/careerAssessment.html>

**Myers-Briggs Type Indicator (MBTI):** Assessment designed to identify how you are energized, how you take in information, how you make decisions, and how you approach life.

<http://hire.unlv.edu/careerAssessmentMBTI.html>

**Strong Interest Inventory:** Generates an in-depth assessment of your interests among a broad range of occupations, work and leisure activities, and educational subjects.

<http://hire.unlv.edu/careerAssessmentStrong.html>

### UNLV Career Services

Career Services encourages ALL UNLV students to take advantage of their services, which include:

- Assistance with developing a career plan and choosing a major
- Career counseling and guidance on building a RESUME
- Preparing for an interview, assistance with job searching and networking.

Phone: 702-895-3495

Campus Location: SSC-A 2<sup>nd</sup> Floor

<http://hire.unlv.edu/>

### Internship Opportunities

UNLV's **Hire a Rebel** is a free, online recruiting system that helps students, alumni, and employers connect in a variety of ways.

Students can use **Hire a Rebel** to search for: job and internship listings, on-campus recruiting interviews, employer information sessions, resume book database, & dates for career fairs.

<http://hire.unlv.edu/careerLink.html>

## MEDIAN SALARIES BY DISCIPLINE 2010-2012

Career	Salary Range	Median Salary
Physicist	\$49,979 - \$139,451	\$91,000
Medical Physicist	\$73,759 - \$189,274	\$122,800

[www.payscale.com](http://www.payscale.com)

**UNLV** | ACADEMIC  
ADVISING  
*Collaborate to Graduate*