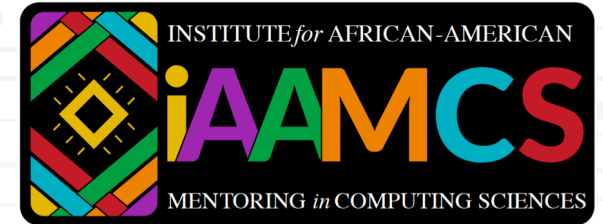


# TOP 5 REASONS

## TO GO TO GRADUATE SCHOOL FOR COMPUTER SCIENCE



### SPECIALIZE IN A PARTICULAR AREA OF COMPUTER SCIENCE

Graduate programs often allow students to specialize in a specific area of computer science, such as machine learning, data science, or computer security. This can be a great way to gain expertise in a specific field and increase your competitiveness in the job market.

1



### INCREASE YOUR EARNING POTENTIAL

Many computer science jobs require a graduate degree, and earning a graduate degree can lead to higher salaries and better job prospects.

3



### ADVANCE YOUR CAREER

A graduate degree can also help you advance in your current career, whether by increasing your knowledge and skills or by opening up new job opportunities.

4



### PURSUE FACULTY POSITIONS

Becoming a faculty member in a computing department allows you to conduct research, teach computing concepts, pursue entrepreneurial activities, and directly impact students.

5



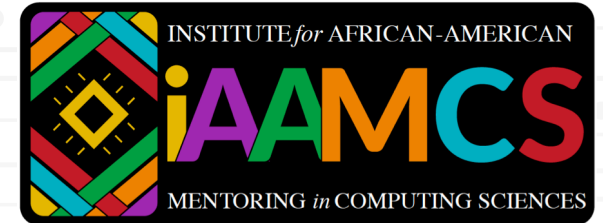
### PURSUE RESEARCH OPPORTUNITIES

If you are interested in research opportunities in industry and academia, pursuing a graduate degree in computer science can be a good way to gain the skills and experience needed to contribute to the field.

2



# 5 THINGS



## TO CONSIDER BEFORE PICKING A GRADUATE PROGRAM IN COMPUTER SCIENCE

### RESEARCH FOCUS

Different areas of research are emphasized at different schools. Look at the faculty and their research areas, and see if you can work with professors whose research aligns with your interests.



1

### PROGRAM SIZE AND STRUCTURE

Consider whether you prefer a larger or smaller program and whether you would like a more structured or flexible program.



2

### LOCATION

Think about things such as the weather, distance from friends and family, dining options, entertainment, and even things like having a place to get your hair done or worship.



3

### FUNDING

Look into the funding opportunities available at different schools, including fellowships, grants, and teaching or research assistantships.



4

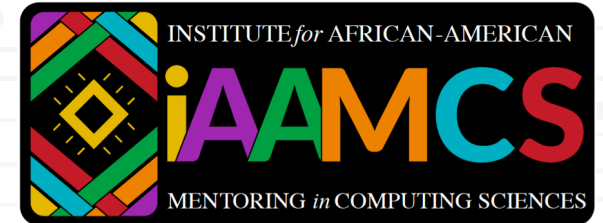
### REPUTATION

Consider the reputation of the program and the school, as this can impact your job prospects after graduation.



5

# 4 THINGS



## THAT SCHOOLS LOOK AT WHEN REVIEWING APPLICANTS FOR A TENURE-TRACK POSITION IN COMPUTER SCIENCE

### WHERE DID YOU GO

This refers to the reputation of the graduate program you attended. Keep in mind CS departments usually prefer to recruit from departments that are ranked equal to them or higher. Rarely are programs lower in rank.



1

### WHO DID YOU WORK FOR

This refers to your PhD advisor. The idea is that the more well-known your advisor is, the more credible you will be. It also means that someone on a search committee can properly understand a candidate's strengths and weaknesses.



2

### WHAT DID YOU DO

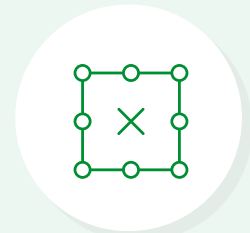
This refers to your success as a researcher. Hiring committees look for two main things: the quality and quantity of your publications.



3

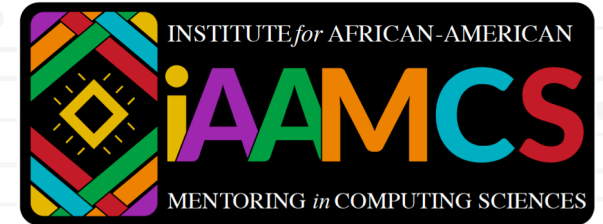
### WHAT IS YOUR AREA

Most departmental job postings have a specific area of computing they're looking to hire for.



4

# 6 THINGS



## TO CONSIDER WHEN SELECTING A PH.D. ADVISOR

### RESEARCH INTERESTS

Find an advisor whose research aligns with your interests and goals. It will be hard to get your advisor to dedicate time to advise you on your area if it is not similar to theirs.

1

### EXPERTISE AND EXPERIENCE

Consider the expertise and experience of the potential advisor. They should have a strong understanding of the field and be able to provide guidance and support as you complete your PhD.

2

### AVAILABILITY

Choose an advisor who is available and willing to meet with you regularly. You should be able to have regular discussions with your advisor about your progress and get feedback on your work.

3

### MENTORSHIP STYLE

Consider the mentorship style of the potential advisor. Do they have a hands-on or more hands-off approach? Do they provide clear guidance or let students work independently?

4

### FUNDING

Look into the funding opportunities available through the advisor's research group or department. Also, look at their track record of funding. This can be important, especially if a research assistantship or fellowship will support you.

It can also be helpful to speak with current or former students who have worked with a potential advisor to understand their mentorship style and the overall research environment.

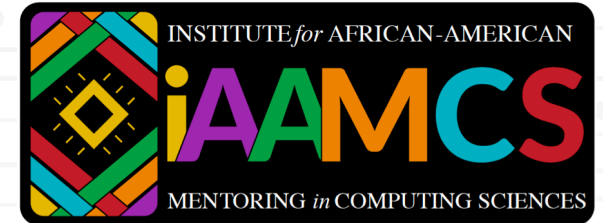
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### COMFORT LEVEL

Finally, trust your instincts and choose an advisor who you feel comfortable working with and who you believe will be able to support your academic and professional development.

6

# 6 STEPS



## TO APPLY FOR DOCTORAL PROGRAMS IN COMPUTING

### RESEARCH POTENTIAL PROGRAMS AND INSTITUTIONS

Identify the schools and programs that align with your interests and goals. This may involve looking at program websites, talking to current or former students, and contacting faculty to learn more about their research and the program.

1

### PREPARE YOUR APPLICATION MATERIALS

As you begin to apply to programs, you will need to gather various materials, including transcripts, letters of recommendation, and a personal statement. Make sure to give yourself plenty of time to work on these materials, as they can be time-consuming.

2

### SUBMIT YOUR APPLICATIONS

Each program will have its own application deadline, so be sure to check the specific deadlines for each program you are interested in. Submit your completed application, along with any required materials, well in advance of the deadline.

3

### WAIT FOR RESPONSES

After you have submitted your application, it may take several weeks or even months to hear back from the programs you applied to. Be patient and try to stay focused on your other responsibilities while you wait.

4

### CONSIDER AND ACCEPT OFFERS

If you receive an offer from a program, carefully consider the pros and cons before deciding. Remember that you may receive multiple offers, so you may have to choose between numerous options.

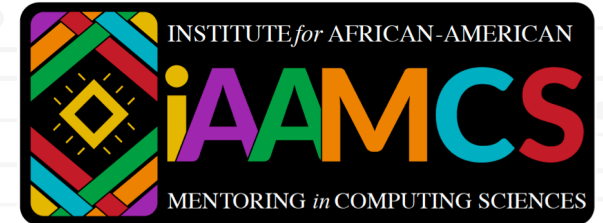
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### PREPARE FOR THE PROGRAM

Once you have accepted an offer, you can begin preparing for your doctoral program. This may involve arranging housing and transportation, purchasing necessary materials and equipment, and completing pre-program requirements.

6

# 5 DIFFERENCES



## BETWEEN AN UNDERGRADUATE AND A DOCTORAL DEGREE PROGRAM IN COMPUTING

### TYPE OF COURSES

Undergraduate programs are typically more general, while doctoral programs are more specialized and focused on a specific area of study.



1

### LENGTH OF PROGRAM

Undergraduate programs typically last four years. In contrast, a doctoral program can vary in length depending on the time it takes to complete your dissertation research and if you start the program with any graduate-level credit.



2

### ADMISSION REQUIREMENTS

Admission to undergraduate programs are usually based on high school grades, standardized test scores, and other factors. Admission to graduate programs is usually more competitive. It may require a bachelor's degree in a related field and additional materials such as letters of recommendation, a personal statement, and a resume.



3

### COST

Doctoral programs at non-profit institutions are usually paid for by the school, department, or some external sponsor. Rarely will they be paid out of pocket by the student.



4

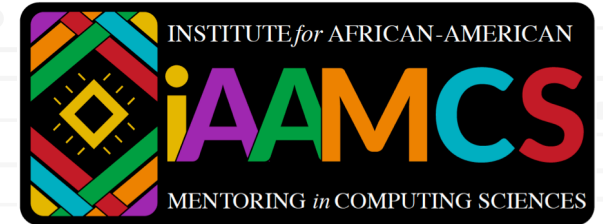
### CAREER GOALS

Undergraduate programs are often focused on preparing students for a wide range of career options. In contrast, graduate programs are typically more geared towards preparing students for specialized careers in a particular field or discipline.



5

# 6 FACTORS



## CONTRIBUTE TO A STUDENT'S ABILITY TO FINISH A PH.D. PROGRAM

### FINANCIAL SUPPORT

This includes the price of tuition but also living expenses and the cost of supplies

1

### MENTORING AND ADVISING

This is more than just advising what courses to take.

2

### NON-FINANCIAL FAMILY SUPPORT

I think constantly asking, "when are you going to finish" is the worst form of motivation

3

### SOCIAL ENVIRONMENT/PEER SUPPORT

This can be in a lab, in a department, or with other students across campus

4

### PROGRAM QUALITY

This applies to factors inside and outside the classroom

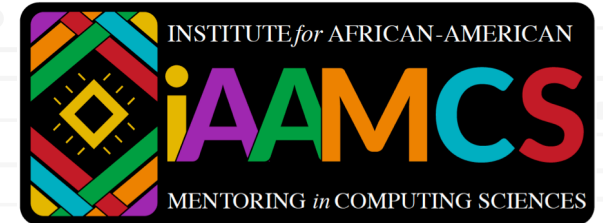
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### PROFESSIONAL/CAREER GUIDANCE

Time should be dedicated throughout a doctoral program to discussing options, not just at the end

6

# 5 TYPICAL



## SOURCES OF FUNDING TO OBTAIN A DOCTORAL DEGREE IN COMPUTING

### RESEARCH ASSISTANTSHIP

This is when a faculty member provides tuition and a monthly stipend in exchange for working on a research project. It's considered the best form of funding.



1

### FELLOWSHIPS

This is the graduate school version of a scholarship. It is an excellent funding source, but you will need to ensure you are working on research while in your program.



2

### GRADUATE TEACHING ASSISTANTSHIP

This consists of grading, teaching, and office hours with students.



3

### GRADUATE ASSISTANTSHIP

The second worst type of funding. Typically busy work like answering phones, filing, or administrative duties.



4

### LOANS

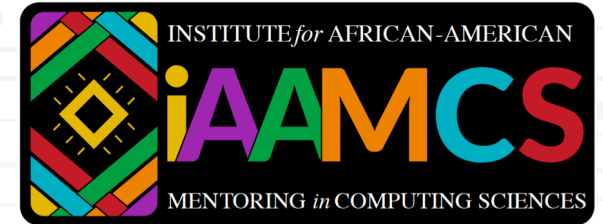
This should be the last resort used to pay for your doctoral program in computing.



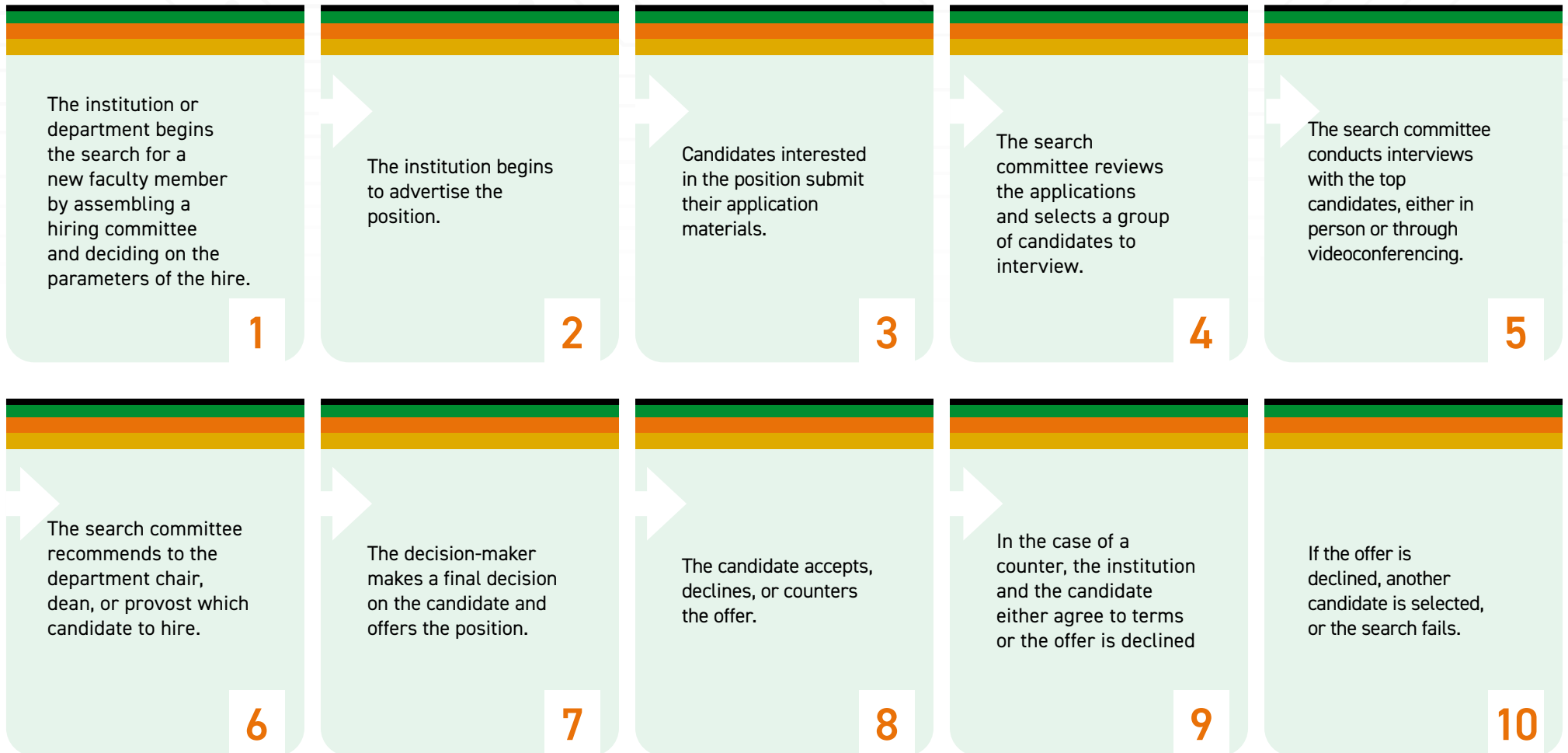
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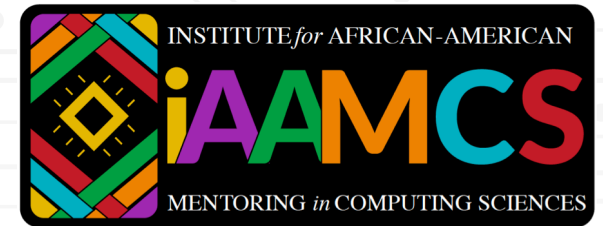
# 10 STEPS



## TO THE TENURE-TRACK HIRING PROCESS IN COMPUTING



# 6 BENEFITS



## FOR PURSUING A POSTDOCTORATE AFTER A PH.D. IN COMPUTING

### RESEARCH EXPOSURE

A postdoc can provide exposure to a researcher or group of researchers that may be more renowned or in a different research area of computing

1

### FUNDING AND RESOURCES

Postdocs are often funded positions, which means you will have a salary and access to research resources, equipment, and possibly students.

2

### FLEXIBILITY

Postdocs are typically only 1 to 2-year positions, so you have the flexibility to move on to a different position or pursue other opportunities after your postdoc is finished.

3

### NETWORKING

Postdocs can be a great way to build connections with other researchers and establish essential relationships

4

### CAREER ADVANCEMENT

A postdoc can help you gain valuable experience and skills that can make you more competitive when applying for academic or industry positions.

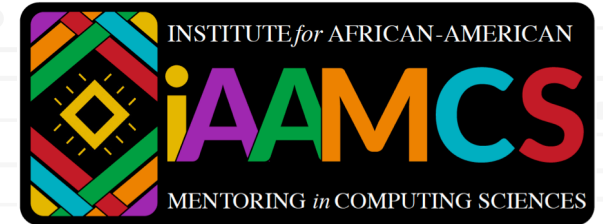
5

### MORE TIME

A Postdoc can buy you more time to get manuscripts published and prepare to get in the next year's hiring cycle

6

# 5 TIPS



## FOR NEGOTIATING A TENURE TRACK JOB OFFER

### DO YOUR RESEARCH

It's essential to clearly understand the expectations and requirements for tenure at the institution, as well as the responsibilities and benefits of the position.



1

### KNOW YOUR PRIORITIES

Consider what is most important to you in a job and what you are willing to negotiate. Some common areas include salary, benefits, research support, teaching load, and opportunities for professional development.



2

### COMMUNICATE CLEARLY

Be upfront and honest about your needs and expectations, and try to be open to compromise. Preparing a list of your priorities and a rationale for why they are essential to you may be helpful



3

### SEEK GUIDANCE

You should consult with a mentor, a trusted colleague, or a professional organization for advice on how to negotiate your offer.



4

### BE PREPARED FOR COUNTEROFFERS

The institution may make counteroffers in response to your requests. Be ready to respond to these in a way that reflects your priorities and values.



5