



















SECSE 09 Workshop What does this mean for researchers? The research lifecycle is changing – an evolution rather than a sea-change Bigger and more complex problems require new methodologies and relationships Policy and funding are increasingly dictating collaboration Advanced networks are essential It's more about data than technology Many social and organisational factors





3 days - 7/5/09 - 9/5/09





| SECSE 09 Workshop Preparing Scientists for Scalabl Software Developmen | | | | | | | |
|---|-----|-----|-----|-----|-----|--|--|
| Characterising eResearch Projects | | | | | | | |
| Scale Indicators | CC1 | CC2 | CC3 | CC4 | CC5 | | |
| # Developers | 8 | 1* | 2 | 1 | 2 | | |
| Users | Ext | Ext | Ext | Ext | Ext | | |
| Colocated | No | Yes | Yes | Yes | Yes | | |
| Duration | 10+ | 10+ | 5+ | 5 | 5 | | |
| KLOC | 100 | 320 | 200 | 10 | 50 | | |
| Multicore | Yes | Yes | Yes | No | No | | |
| Multiplatform | Yes | Yes | Yes | Yes | Yes | | |
| Outward Dependencies | Yes | Yes | Yes | Yes | Yes | | |
| Inward Dependencies | Yes | Yes | Yes | No | No | | |
| ° i VEC | | | | | | | |
| The fact of advanced comparing in Restarch Autoria' | | | | | | | |

| E 09 Workshop | | | ropani | Softwar | e Develo | |
|--|-----|-----|--------|---------|----------|--|
| SWEBOK and Selected Chemistry Projects | | | | | | |
| Knowledge Area | CC1 | CC2 | CC3 | CC4 | CC5 | |
| Requirements | A-V | A-V | A-V | A-V | A-V | |
| Design | N-V | A-V | A-V | A-V | A-V | |
| Construction | N-V | A-V | A-V | N-I | N-I | |
| Testing | N-V | A-V | A-V | N-I | N-I | |
| Maintenance | N-V | A-V | N-V | A-V | A-V | |
| Configuration Mgmt | A-V | A-V | A-V | A-V | A-V | |
| Engineering Mgmt | N-V | A-V | A-V | N-I | N-I | |
| Engineering Process | N-V | N-V | N-V | N-V | N-V | |
| Tools and Methods | N-V | N-V | N-V | N-V | N-V | |
| Quality | N-V | A-V | A-V | N-I | N-I | |









| Au | Scop | e and SWEBOK | | |
|---------------------|--------|--|--|--|
| Knowledge Area | AppVal | Comments | | |
| Requirements | A-V | Requirements changing, so agile approach taken | | |
| Design | A-V | Patterns | | |
| Construction | A-V | Coding standards, daily builds | | |
| Testing | A-V | Test suites continually updated and extended | | |
| Maintenance A-V | | Post-mortem, bug-tracking | | |
| Configuration Mgmt | A-V | Release management | | |
| Engineering Mgmt | A-V | Automated build/ continuous integration environment | | |
| Engineering Process | A-V | Formalised process | | |
| Tools and Methods | A-V | Agile - SCRUM | | |
| Quality | A-V | Peer reviews on all tasks, static analysis tools | | |









| | | Interi | n Induc | tion | | | |
|--|--|---|--|--------------------------------------|--|--|--|
| VEC Internships 2008-9 Induction SCHEDULE 1-5 December 2008 | | | | | | | |
| | Monday 1" Dec ARRC am, WASP pm | Tuesday 2 rd Dec ARRC | Wednesday 3 rd Dec ARRC | Thursday 4 th Dec ARRC | Friday 5 th Dec ARRC | | |
| and a set of the set o | Ban: Webpine 9:15am: Hero to MBC Programs Facilities sResearch 11am: ARRC Facility tour | Research Management Software Engineering Literiong and Open Source Data Management Data Management Planning | Hero to using AVEC > Cognac > XI3 > XE | Parallel Programming Concepts | 780 | | |
| | form: Vacatization with Paul Bourke Jorn: WASP Facility tour | Internatio Reporting Collaborative exotkapace Accounts Record talks and requirements | Gind Computing Concepts Generic Gint Client | Advanced Parallel Programming | TBC Afternoon tea, season with supervision | | |





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|---|------------|-------|--------|--|--|--|--|--|
| Depth of Knowledge / Target User Base | | | | | | | | |
| SWEBOK Knowledge Area | Individual | Group | Public | | | | | |
| Requirements | ++ | +++ | +++ | | | | | |
| Design | ++ | +++ | +++ | | | | | |
| Construction | + | ++ | +++ | | | | | |
| Testing | ++ | +++ | +++ | | | | | |
| Maintenance | + | ++ | +++ | | | | | |
| Configuration Mgmt | ++ | +++ | +++ | | | | | |
| Engineering Mgmt | + | ++ | +++ | | | | | |
| Engineering Process | + | ++ | +++ | | | | | |
| Tools and Methods | ++ | +++ | +++ | | | | | |
| Quality | + | ++ | +++ | | | | | |



SECSE 09 Workshop

Certificate in Advanced Computing

- Project Management
- all knowledge areas, licencing, legal issuesVisualisation
 - concepts, multidimensional data visualisation, geographic visualisation, user interfaces, haptics
- Grid and Distributed Computing
 concepts, grid computing, volunteer computing,
 BOINC API

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Early Feedback - Diversity

- Even distribution non-user, new user, longer term user (> 6 months)
- Mre self-taught programmers than those with computing qualifications
- Diverse domains, needs, project size, project maturity

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