NSF IIS Clusters and Funding

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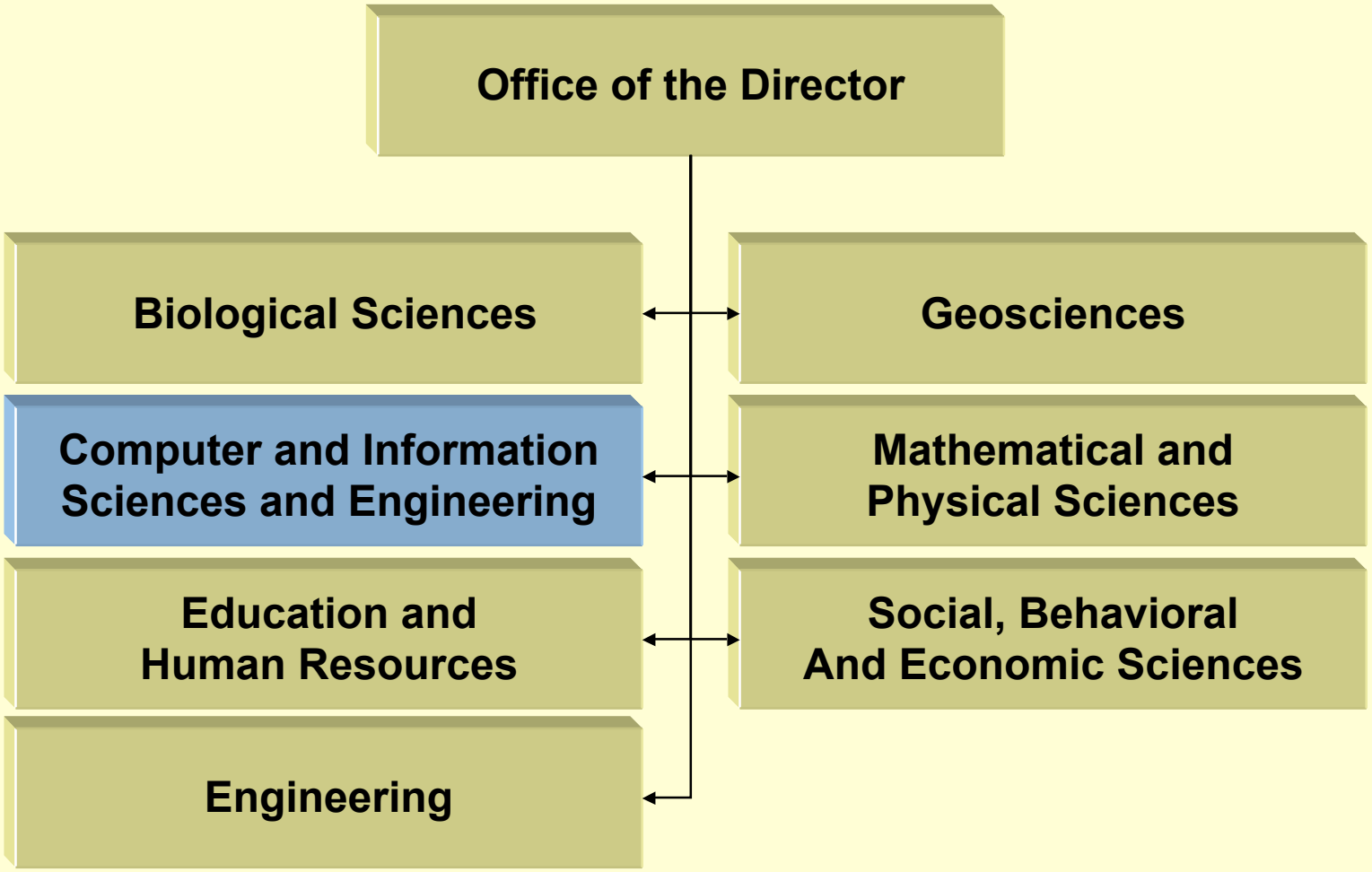
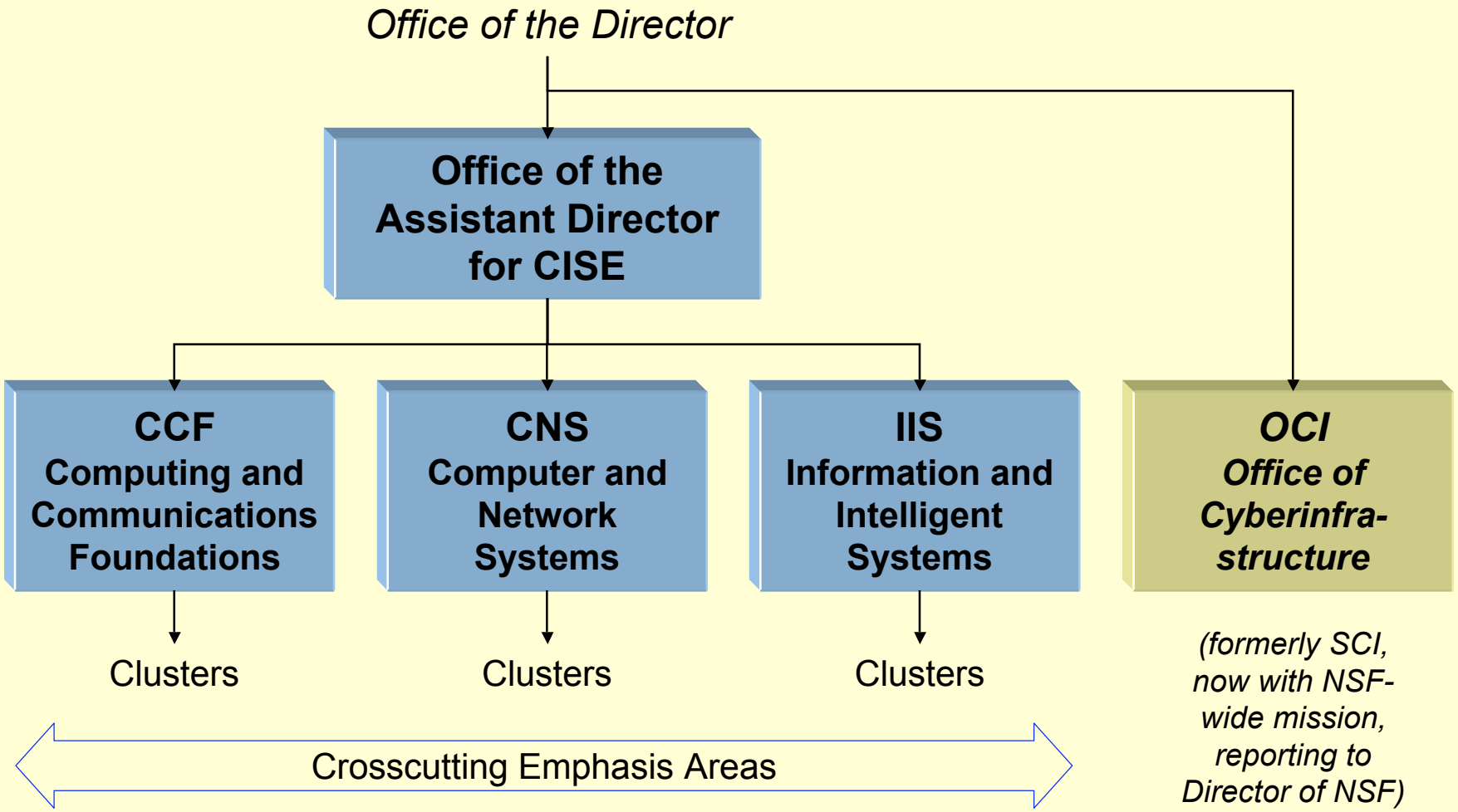
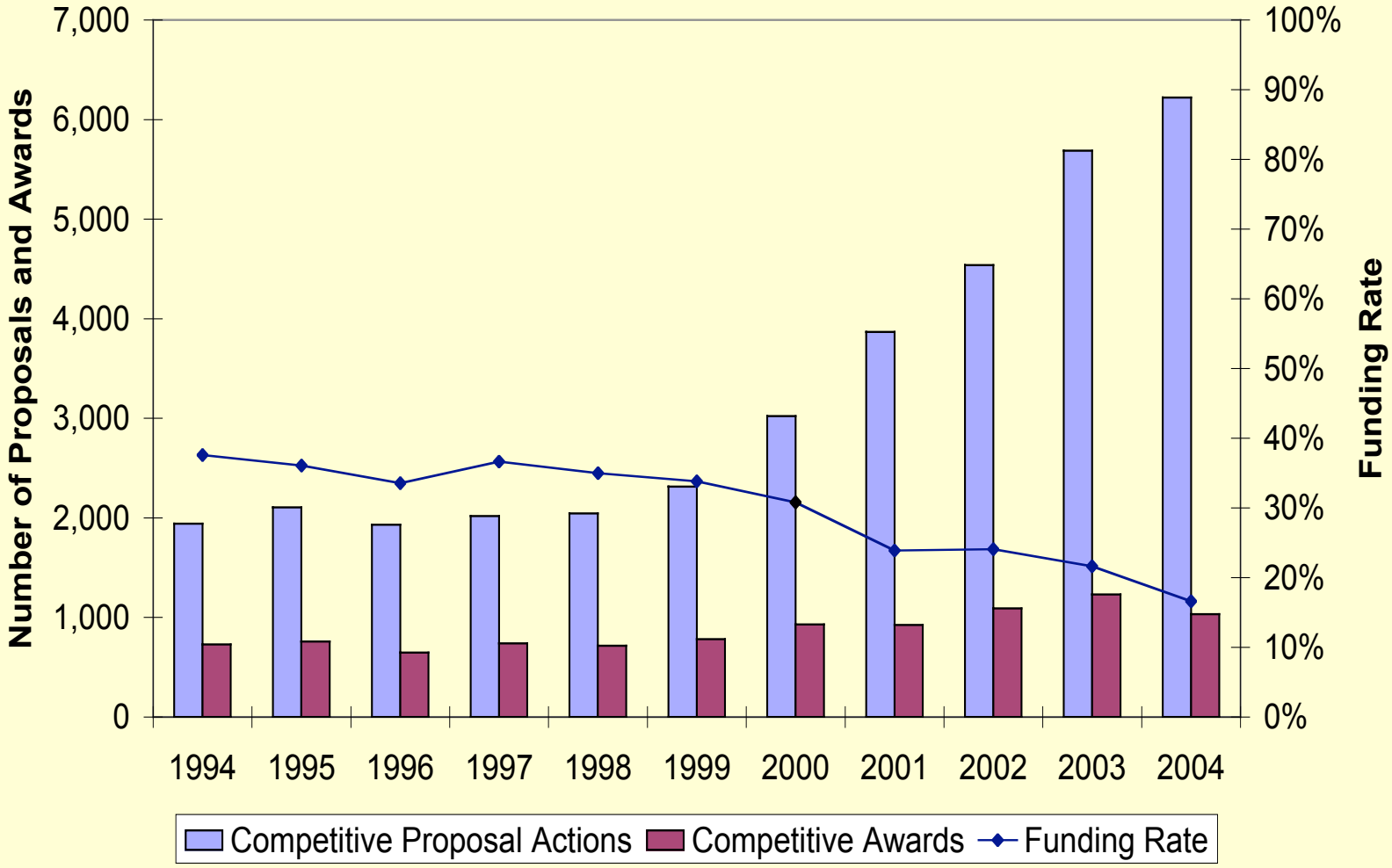
How NSF is organized



How CISE is organized



Funding Rate for Competitive Awards in CISE

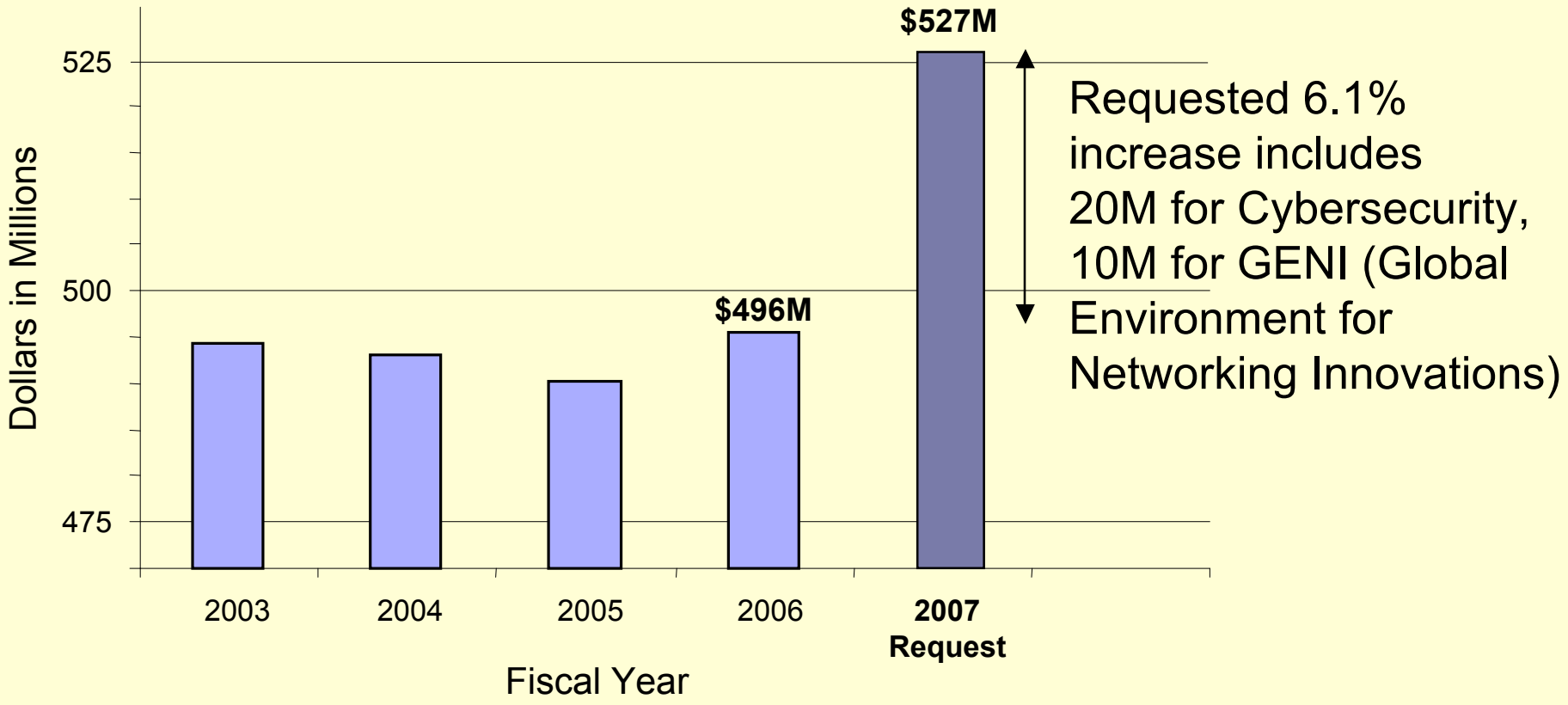


CISE Proposal/Award Statistics

FY	Proposals	Awards	Funding Rate	CGIs	Supple-ments
2005	4,962	1,086	23%	1,398	581
2004	6,266	1,017	16%	1,297	400
2003	5,346	1,174	22%	1,023	354
2002	4,314	1,038	24%	918	308
2001	3,579	885	25%	768	231
2000	2,853	903	32%	547	210
1999	2,209	746	34%	493	301
1998	1,885	667	35%	476	211
1997	1,894	684	36%	527	219
1996	1,760	601	34%	610	183
1995	1,941	708	36%	631	215

**ADJUSTED*

CISE Budget: 2003-2007



Information and Intelligent Systems Reorganization into Clusters

- Robust Intelligence

  Artificial Intelligence, Human Language and Communication, Robotics, Computer Vision, Computational Neuroscience

- Human-centered Computing

  Human Computer Interaction, Social Informatics, Universal Access

- Information Integration and Informatics

  Data, Information, and Knowledge Management; Information Integration; Science and Engineering Informatics; Digital Libraries; Digital Government

Information and Intelligent Systems

New Cluster-oriented Solicitation

- Recently published; submission deadlines
  - ✓ October 19, 2006 for Large Projects ($900,001 to $1,800,000)
  - ✓ November 02, 2006 for Medium Projects ($450,001 to $900,000)
  - ✓ December 06, 2006 for Small Projects (up to $450,000 total budget)
- 150 awards are anticipated; up to 100 Small, up to 50 Medium, and up to three Large
- CAREER (submission date July 18 for CISE) and SGER proposals (can be submitted any time) need to be responsive to the technical directions in the new solicitation

Evaluation of proposals in clusters

- Proposals (including CAREER and SGER proposals) will be submitted to clusters, not to programs
- All proposals submitted to a cluster will be looked at by the cluster members collectively
- Panels will be formed by clusters and will depend on the technical diversity of the whole submission to a cluster
- Easier to form multidisciplinary panels within clusters
- The solicitation encourages multidisciplinary proposals
- Cross-cluster reviewing possible if necessary (in particular, between the RI and HCC clusters)
- SGER proposals need to be discussed with Program Directors before submision

The Former Human Language and Communication Program (HLC)

Initiated by Dr. Mary Harper

- This **HLC program** emphasized innovative advances in computer and information sciences relating to **all forms of human communication.**
- High-level human communication topics:
  - ✓ Text Processing
  - ✓ Speech Processing
  - ✓ Multimodal Communication Processing
- HLC was attempting to strengthen current research while broadening future research directions of the language processing research community (e.g., multimodal communication).

HLC within Robust Intelligence

- The general goals of robust intelligence include the study, theory, design, and implementation of general, integrated, intelligent perception, communication, and reasoning capabilities that are not constrained to address only a single problem in isolation or in one particular context.
- With respect to modeling the uniquely human ability to communicate using natural language, robust intelligent systems strive to achieve human-level performance in language understanding and generation, succinct rendering or summarization of information, and translation between languages.

HLC within Robust Intelligence

- One of cross-cutting threads: Human-Robot (or Agent) Interaction
- Implications for HLC area - renewed attention to
  - ✓ language dialogue (human-human, machine-human);
  - ✓ multimodal dialogue;
  - ✓ ASR of imperfect and affected speech;
  - ✓ speech-to-concept understanding; concept-to-speech generation
- Need more corpora to support these research areas!

Detailed HLC topics in the solicitation

- Computational approaches and architectures for analyzing, understanding, generating and summarizing speech, text and other communicative forms (e.g., gesture, haptic); interaction of communicative forms; and dialogue, conversation and other less formal genres (e.g., meeting minutes).
- Computational models of meaning, intent, and realization at various levels of language representation with a particular attention to semantics and pragmatics; cognitively and neuro-linguistically informed approaches for model evaluation.
- Novel approaches to longstanding language processing problems such as speaker and language recognition, machine translation, evaluation metrics, and multilingual man-machine communication, including intelligent information delivery.
- Computational approaches to language processing for underrepresented groups such as minority language groups and aging and disabled population groups.

CISE CRI (Computing Research Infrastructure) Program

- Funds community resources for IIS programs; reviewers are supplied by the technical program directors
- Example of a recent HLC resource/annotation award:
  - ✓ Towards a Comprehensive Linguistic Annotation of Language (Brandeis, UColorado, Pitt, Penn, NYU), $850K, 24 months; goals include achieving an international consensus on a meta-specification framework
- http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=12810&org=CNS
- Letter of Intent Deadline Date: July 24, 2006, annually
- Full Proposal Deadline Date: August 28, 2006, annually

Thank you

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Human Language and Communication

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